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FIRST ANNUAL REPORT

OF THE

BUREAU OF ETHNOLOGY

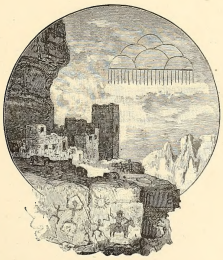
TO THE

SECRETARY OF THE SMITHSONIAN INSTITUTION

1879-'80

BY

J. W. POWELL
DIRECTOR



WASHINGTON
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1881

SMITHSONIAN INSTITUTION, BUREAU OF ETHNOLOGY,
Washington, D. C., July, 1880.

Prof. SPENCER F. BAIRD,
Secretary of the Smithsonian Institution,
Washington, D. C.:

SIR: I have the honor to transmit herewith the first annual report of the operations of the Bureau of Ethnology.

By act of Congress, an appropriation was made to continue researches in North American anthropology, the general direction of which was confided to yourself. As chief executive officer of the Smithsonian Institution, you entrusted to me the immediate control of the affairs of the Bureau. This report, with its appended papers, is designed to exhibit the methods and results of my administration of this trust.

If any measure of success has been attained, it is largely due to general instructions received from yourself and the advice you have ever patiently given me on all matters of importance.

I am indebted to my assistants, whose labors are delineated in the report, for their industry, hearty co-operation, and enthusiastic love of the science. Only through their zeal have your plans been executed.

Much assistance has been rendered the Bureau by a large body of scientific men engaged in the study of anthropology, some of whose names have been mentioned in the report and accompanying papers, and others will be put on record when the subject-matter of their writings is fully published.

I am, with respect, your obedient servant,

J. W. POWELL.

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FIRST ANNUAL REPORT

OF THE

BUREAU OF ETHNOLOGY.

By J. W. Powell, *Director.*

INTRODUCTORY.

The exploration of the Colorado River of the West, begun in 1869 by authority of Congressional action, was by the same authority subsequently continued as the second division of the Geographical and Geological Survey of the Territories, and, finally, as the Geographical and Geological Survey of the Rocky Mountain Region.

By act of Congress of March 3, 1879, the various geological and geographical surveys existing at that time were discontinued and the United States Geological Survey was established.

In all the earlier surveys anthropologic researches among the North American Indians were carried on. In that branch of the work finally designated as the Geographical and Geological Survey of the Rocky Mountain Region, such research constituted an important part of the work. In the act creating the Geological Survey, provision was made to continue work in this field under the direction of the Smithsonian Institution, on the basis of the methods developed and materials collected by the Geographical and Geological Survey of the Rocky Mountain Region.

Under the authority of the act of Congress providing for the continuation of the work, the Secretary of the Smithsonian Institution intrusted its management to the former director of

the Survey of the Rocky Mountain Region, and a bureau of ethnology was thus practically organized.

In the Annual Report of the Geographical and Geological Survey of the Rocky Mountain Region for 1877, the following statement of the condition of the work at that time appears:

ETHNOGRAPHIC WORK.

During the same office season the ethnographic work was more thoroughly organized, and the aid of a large number of volunteer assistants living throughout the country was secured. Mr. W. H. Dall, of the United States Coast Survey, prepared a paper on the tribes of Alaska, and edited other papers on certain tribes of Oregon and Washington Territory. He also superintended the construction of an ethnographic map to accompany his paper, including on it the latest geographic determination from all available sources. His long residence and extended scientific labors in that region peculiarly fitted him for the task, and he has made a valuable contribution both to ethnology and geography.

With the same volume was published a paper on the habits and customs of certain tribes of the State of Oregon and Washington Territory, prepared by the late Mr. George Gibbs while he was engaged in scientific work in that region for the government. The volume also contains a Niskwalli vocabulary with extended grammatic notes, the last great work of the lamented author.

In addition to the map above mentioned and prepared by Mr. Dall, a second has been made, embracing the western portion of Washington Territory and the northern part of Oregon. The map includes the results of the latest geographic information and is colored to show the distribution of Indian tribes, chiefly from notes and maps left by Mr. Gibbs.

The Survey is indebted to the following gentlemen for valuable contributions to this volume: Gov. J. Furujelm, Lieut. E. De Meulen, Dr. Wm. F. Tolmie, and Rev. Father Mengarini.

Mr. Stephen Powers, of Ohio, who has spent several years in the study of the Indians of California, had the year before been engaged to prepare a paper on that subject. In the mean time at my request he was employed by the Bureau of Indian Affairs to travel among these tribes for the purpose of making collections of Indian arts for the International Exhibition. This afforded him opportunity of more thoroughly accomplishing his work in the preparation of the above-mentioned paper. On his return the new material was incorporated with the old, and the whole has been printed.

At our earliest knowledge of the Indians of California they were divided into small tribes speaking diverse languages and belonging to radically different stocks, and the whole subject was one of great complexity and interest. Mr. Powers has successfully unraveled the diffi-

cult problems relating to the classification and affinities of a very large number of tribes, and his account of their habits and customs is of much interest.

In the volume with his paper will be found a number of vocabularies collected by himself, Mr. George Gibbs, General George Crook, U. S. A., General W. B. Hazen, U. S. A., Lieut. Edward Ross, U. S. A., Assistant Surgeon Thomas F. Azpell, U. S. A., Mr. Ezra Williams, Mr. J. R. Bartlett, Gov. J. Furujelm, Prof. F. L. O. Roehrig, Dr. William A. Gabb, Mr. H. B. Brown, Mr. Israel S. Diehl, Dr. Oscar Loew, Mr. Albert S. Gatschet, Mr. Livingston Stone, Mr. Adam Johnson, Mr. Buckingham Smith, Padre Aroyo, Rev. Father Gregory Mengarini, Padre Juan Comelias, Hon. Horatio Hale, Mr. Alexander S. Taylor, Rev. Antonio Timmeno, and Father Bonaventure Sitjar.

The volume is accompanied by a map of the State of California, compiled from the latest official sources and colored to show the distribution of linguistic stocks.

The Rev. J. Owen Dorsey, of Maryland, has been engaged for more than a year in the preparation of a grammar and dictionary of the Ponka language. His residence among these Indians as a missionary has furnished him favorable opportunity for the necessary studies, and he has pushed forward the work with zeal and ability, his only hope of reward being a desire to make a contribution to science.

Prof. Otis T. Mason, of Columbian College, has for the past year rendered the office much assistance in the study of the history and statistics of Indian tribes.

On June 13, Brevet Lieut. Col. Garrick Mallery, U. S. A., at the request of the Secretary of the Interior, joined my corps under orders from the honorable Secretary of War, and since that time has been engaged in the study of the statistics and history of the Indians of the western portion of the United States.

In April last, Mr. A. S. Gatschet was employed as a philologist to assist in the ethnographic work of this Survey. He had previously been engaged in the study of the languages of various North American tribes. In June last at the request of this office he was employed by the Bureau of Indian Affairs to collect certain statistics relating to the Indians of Oregon and Washington Territory, and is now in the field. His scientific reports have since that time been forwarded through the honorable Commissioner of Indian Affairs to this office. His work will be included in a volume now in course of preparation.

Dr. H. C. Yarrow, U. S. A., now on duty at the Army Medical Museum, in Washington, has been engaged during the past year in the collection of material for a monograph on the customs and rites of sepulture. To aid him in this work circulars of inquiry have been widely circulated among ethnologists and other scholars throughout North America, and much material has been obtained which will greatly supplement his own extended observations and researches.

Many other gentlemen throughout the United States have rendered me valuable assistance in this department of investigation. Their labors will receive due acknowledgment at the proper time, but I must not fail to render my sincere thanks to these gentlemen, who have so cordially and efficiently co-operated with me in this work.

A small volume, entitled "Introduction to the Study of Indian Languages," has been prepared and published. This book is intended for distribution among collectors. In its preparation I have been greatly assisted by Prof. W. D. Whitney, the distinguished philologist of Yale College. To him I am indebted for that part relating to the representation of the sounds of Indian languages; a work which could not be properly performed by any other than a profound scholar in this branch.

I complete the statement of the office-work of the past season by mentioning that a tentative classification of the linguistic families of the Indians of the United States has been prepared. This has been a work of great labor, to which I have devoted much of my own time, and in which I have received the assistance of several of the gentlemen above mentioned.

In pursuing these ethnographic investigations it has been the endeavor as far as possible to produce results that would be of practical value in the administration of Indian affairs, and for this purpose especial attention has been paid to vital statistics, to the discovery of linguistic affinities, the progress made by the Indians toward civilization, and the causes and remedies for the inevitable conflict that arises from the spread of civilization over a region previously inhabited by savages. I may be allowed to express the hope that our labors in this direction will not be void of such useful results.

In 1878 no report of the Survey of the Rocky Mountain Region was published, as before its completion the question of reorganizing all of the surveys had been raised, but the work was continued by the same methods as in previous years.

The operations of the Bureau of Ethnology during the past fiscal year will be briefly described.

In the plan of organization two methods of operation are embraced:

First. The prosecution of research by the direct employment of scholars and specialists; and

Second. By inciting and guiding research immediately conducted by collaborators at work throughout the country.

It has been the effort of the Bureau to prosecute work in the various branches of North American anthropology on a systematic plan, so that every important field should be cultivated, limited only by the amount appropriated by Congress.

With little exception all sound anthropologic investigation in the lower states of culture exhibited by tribes of men, as distinguished from nations, must have a firm foundation in language Customs, laws, governments, institutions, mythologies, religions, and even arts can not be properly understood without a fundamental knowledge of the languages which express the ideas and thoughts embodied therein. Actuated by these considerations prime attention has been given to language.

It is not probable that there are many languages in North America entirely unknown, and in fact it is possible there are none; but of many of the known languages only short vocabularies have appeared. Except for languages entirely unknown, the time for the publication of short vocabularies has passed; they are no longer of value. The Bureau proposes hereafter to publish short vocabularies only in the exceptional cases mentioned above.

The distribution of the Introduction to the Study of Indian Languages is resulting in the collection of a large series of chrestomathies, which it is believed will be worthy of publication. It is also proposed to publish grammars and dictionaries when those have been thoroughly and carefully prepared. In each case it is deemed desirable to connect with the grammar and dictionary a body of literature designed as texts for reference in explaining the facts and principles of the language. These texts will be accompanied by interlinear translations so arranged as greatly to facilitate the study of the chief grammatic characteristics

BIBLIOGRAPHY OF NORTH AMERICAN PHILOLOGY, BY MR. J. C. PILLING.

There is being prepared in the office a bibliography of North American languages. It was originally intended as a card catalogue for office use, but has gradually assumed proportions which seem to justify its publication. It is designed as an author's catalogue, arranged alphabetically, and is to include

titles of grammars, dictionaries, vocabularies, translations of the scriptures, hymnals, doctrinæ christianæ, tracts, school-books, etc., general discussions, and reviews when of sufficient importance; in short, a catalogue of authors who have written in or upon any of the languages of North America, with a list of their works.

It has been the aim in preparing this material to make not only full titles of all the works containing linguistics, but also to exhaust editions. Whether full titles of editions subsequent to the first will be printed will depend somewhat on the size of the volume it will make, there being at present about four thousand five hundred cards, probably about three thousand titles

The bibliography is based on the library of the Director, but much time has been spent in various libraries, public and private, the more important being the Congressional, Boston Public, Boston Athenæum, Harvard College, Congregational of Boston, Massachusetts Historical Society, American Antiquarian Society of Worcester, the John Carter Brown at Providence, the Watkinson at Hartford, and the American Bible Society at New York. It is hoped that Mr. Pilling may find opportunity to visit the principal libraries of New York and Philadelphia, especially those of the historical societies, before the work is printed.

In addition to personal research, much correspondence has been carried on with the various missionaries and Indian agents throughout the United States and Canada, and with gentlemen who have written upon the subject, among whom are Dr. H. Rink, of Copenhagen, Dr. J. C. E. Buschman, of Berlin, and the well-known bibliographers, Mr. J. Sabin, of New York, Hon. J. R. Bartlett, of Providence, and Señor Don J. G. Icazbalceta, of the City of Mexico.

Mr. Pilling has not attempted to classify the material linguistically. That work has been left for a future publication, intended to embody the results of an attempt to classify the tribes of North America on the basis of language, and now in course of preparation by the Director.

LINGUISTIC AND OTHER ANTHROPOLOGIC RESEARCHES, BY THE REV. J. OWEN DORSEY.

For a number of years Mr. Dorsey has been engaged in investigations among a group of cognate Dakotan tribes embracing three languages: Ȼegiha, spoken by the Ponkas and Omahas, with a closely related dialect of the same, spoken by the Kansas, Osage, and Kwapa tribes; the ɹɔiwere, spoken by the Iowa, Oto, and Missouri tribes; and the Hotcañgara, spoken by the Winnebago.

In July, 1878, he repaired to the Omaha reservation, in the neighborhood of which most of these languages are spoken, for the purpose of continuing his studies.

Mr. Dorsey commenced the study of the Ȼegiha in 1871, and has continued his researches in the group until the present time. He has collected a very large body of linguistic material, both in grammar and vocabulary, and when finally published a great contribution will be made to North American linguistics.

These languages are excessively complex because of the synthetic characteristics of the verb, incorporated particles being used in an elaborate and complex scheme.

In these languages six general classes of pronouns are found:

1st. The free personal.
2d. The incorporated personal.
3d. The demonstrative.
4th. The interrogative.
5th. The relative.
6th. The indefinite.

One of the most interesting features of the language is found in the genders or particle classifiers. The genders or classifiers are *animate* and *inanimate*, and these are again divided into the *standing*, *sitting*, *reclining*, and *moving;* but in the Winnebago the *reclining* and *moving* constitute but one class. They are suffixed to nouns, pronouns, and verbs. When nouns, adjectives, adverbs, and prepositions are used as predicants, *i. e.*,

to perform the function of verbs, these classifiers are also suffixed The classifiers point out with particularity the gender or class of the subject and object. When numerals are used as nouns the classifiers are attached.

In nouns and pronouns case functions are performed by an elaborate system of postpositions in conjunction with the classifiers.

The verbs are excessively complex by reason of the use of many incorporated particles to denote *cause, manner, instrument, purpose, condition, time,* etc. Voice, mode, and tense are not systematically differentiated in the morphology, but voices, modes, and tenses, and a great variety of adverbial qualifications enter into the complex scheme of incorporated particles.

Sixty-six sounds are found in the ₵egiha; sixty-two in the ɹɔiwere; sixty-two in the Hotcañgara; and the alphabet adopted by the Bureau is used successfully for their expression.

While Mr. Dorsey has been prosecuting his linguistic studies among these tribes he has had abundant opportunity to carry on other branches of anthropologic research, and he has collected extensive and valuable materials on sociology, mythology, religion, arts, customs, etc His final publication of the ₵egiha will embrace a volume of literature made up of mythic tales, historical narratives, letters, etc., in the Indian, with interlinear translations, a selection from which appears in the papers appended to this report. Another volume will be devoted to the grammar and a third to the dictionary.

LINGUISTIC RESEARCHES, BY THE REV. S. R. RIGGS.

In 1852 the Smithsonian Institution published a grammar and dictionary of the Dakota language prepared by Mr. Riggs. Since that time Mr. Riggs, assisted by his sons, A. L. and T L. Riggs, and by Mr. Williamson, has been steadily engaged in revising and enlarging the grammar and dictionary; and at the request of the Bureau he is also preparing a volume of Dakota literature as texts for illustration to the grammar and

dictionary. He is rapidly preparing this work for publication, and it will soon appear.

The work of Mr. Riggs and that of Mr. Dorsey, mentioned above, with the materials already published, will place the Dakotan languages on record more thoroughly than those of any other family in this country.

The following is a table of the languages of this family now recognized by the Bureau:

LANGUAGES OF THE DAKOTAN FAMILY.

1. Dakóta (Sioux), in four dialects:
   (*a*) Mdéwaka^{a}to^{a}wa^{a} and Waqpékute.
   (*b*) Waqpéto^{a}wa^{a} (Warpeton) and Sisíto^{a}wa^{a} (Sisseton).
   These two are about equivalent to the modern Isa^{a}'yati (Santee).
   (*c*) Ihañk'to^{a}wa^{a} (Yankton), including the Assiniboins.
   (*d*) Títo^{a}wa^{a} (Teton).
2. Ꝑégiha, in two (?) dialects:
   (*a*) Uma^{a}'ha^{a} (Omaha), spoken by the Omahas and Ponkas.
   (*b*) Ugáqpa (Kwapa), spoken by the Kwapas, Osages, and Kansas.
3. Ꞗoiwére, in two dialects:
   (*a*) Ꞗoiwére, spoken by the Otos and Missouris.
   (*b*) Ꞗoéŋiwere, spoken by the Iowas.
4. Hotcañ'gara, spoken by the Winnebagos.
5. Númañkaki (Mandan), in two dialects:
   (*a*) Mitútahañkuc.
   (*b*) Ruptári.
6. Hiꝑátsa (Hidatsa), in two (?) dialects:
   (*a*) Hidátsa or Minnetaree.
   (*b*) Absároka or Crow.
7. Túlelo, in Canada.
8. Katâ'ba (Catawba), in South Carolina.

LINGUISTIC AND GENERAL RESEARCHES AMONG THE KLAMATH INDIANS, BY MR. A. S. GATSCHET.

Of the Klamath language of Oregon there are two dialects—one spoken by the Indians of Klamath Lake and the other by the Modocs—constituting the Lutuami family of Hale and Gallatin.

Mr. Gatschet has spent much time among these Indians, at their reservation and elsewhere, and has at the present time

in manuscript nearly ready for the printer a large body of Klamath literature, consisting of mythic, ethnic, and historic tales, a grammar and a dictionary. The stories were told by the Indians and recorded by himself, and constitute a valuable contribution to the subject. Some specimens will appear in the papers appended to this report.

The grammatic sketch treats of both dialects, which differ but slightly in grammar but more in vocabulary. The grammar is divided into three principal parts: Phonology, Morphology, and Syntax.

In Phonology fifty different sounds are recognized, including simple and compound consonants, the vowels in different quantities, and the diphthongs.

A characteristic feature of this language is described in explaining syllabic reduplication, which performs iterative and distributive functions. Reduplication for various purposes is found in most of the languages of North America. In the Nahuatl, Sahaptin, and Selish families it is most prominent. Mr. Gatschet's researches will add materially to the knowledge of the functions of reduplication in tribal languages.

The verbal inflection is comparatively simple, for in it the subject and object pronouns are not incorporated. In the verb Mr. Gatschet recognizes ten general forms, a part of which he designates as *verbals*, as follows:

1. Infinitive in -a.
2. Durative in ota.
3. Causative in -oga.
4. Indefinite in -ash.
5. Indefinite in -uīsh.
6. Conditional in -asht.
7. Desiderative in -ashtka.
8. Intentional in -tki.
9. Participle in -ank.
10. Past participle and verbal adjectives in -tko.

Tense and mode inflection is very rudimentary and is mostly accomplished by the use of particles. The study of the prefixes and suffixes of derivation is one of the chief difficulties of

the language, for they combine in clusters, and are not easily analyzed, and their functions are often obscure.

The inflection of nouns by case endings and postpositions is rich in forms; that of the adjective and numeral less elaborate.

Of the pronouns, only the demonstrative show a complexity of forms.

Another feature of this language is found in verbs appended to certain numerals, and thus serving as numerical classifiers. These verbs express methods of counting and relate to form; that is, in each case they present the Indian in the act of counting objects of a particular form and placing them in groups of tens.

The appended verbs used as classifiers signify *to place*, but in Indian languages we are not apt to find a word so highly differentiated as *place*, but in its stead a series of words with verbs and adverbs undifferentiated, each signifying *to place*, with a qualification, as *I place upon*, *I lay alongside of*, *I stand up*, *by*, etc. Thus we get classifiers attached to numerals in the Klamath, analogous to the classifiers attached to verbs, nouns, numerals, etc., in the Ponka, as mentioned above.

These classifiers in Klamath are further discriminated as to form; but these form discriminations are the homologues of attitude discriminations in the Ponka, for the form determines the attitude.

It is interesting to note how often in these lower languages attitude or form is woven into the grammatic structure. Perhaps this arises from a condition of expression imposed by the want of the verb *to be*, so that when existence in place is to be affirmed, the verbs of attitude, *i. e.*, *to stand*, *to sit*, *to lie*, and sometimes *to move*, are used to predicate existence in place, and thus the mind comes habitually to consider all things as in the one or the other of these attitudes. The process of growth seems to be that verbs of attitude are primarily used to affirm existence in place until the habit of considering the attitude is established; thus participles of attitude are used with nouns, &c., and finally, worn down by the law of phonic change, for economy, they become classifying particles. This

view of the origin of classifying particles seems to be warranted by studies from a great variety of Indian sources.

The syntactic portion is divided into four parts:

1st. On the predicative relation;

2d. On the objective relation;

3d. On the attributive relation; and the

4th. Exhibits the formation of simple and compound sentences, followed by notes on the incorporative tendency of the language, its rhetoric, figures, and idioms.

The alphabet adopted by Mr. Gatschet differs slightly from that used by the Bureau, particularly in the modification of certain Roman characters and the introduction of one Greek character. This occurred from the fact that Mr. Gatschet's material had been partly prepared prior to the adoption of the alphabet now in use.

Mr. Gatschet has collected much valuable material relating to governmental and social institutions, mythology, religion, music, poetry, oratory, and other interesting matters. The body of Klamath literature, or otherwise the text previously mentioned, constitutes the basis of these investigations.

STUDIES AMONG THE IROQUOIS, BY MRS. E. A. SMITH

Mrs. Smith, of Jersey City, has undertaken to prepare a series of chrestomathies of the Iroquois language, and has already made much progress. Three of them are ready for the printer, and that on the Tuscarora language has been increased much beyond the limits at first established. She has also collected interesting material relating to the mythology, habits, customs, &c., of these Indians, and her contributions will be interesting and important.

WORK BY PROF. OTIS T. MASON.

On the advent of the white man in America a great number of tribes were found. For a variety of reasons the nomenclature

of these tribes became excessively complex. Names were greatly multiplied for each tribe and a single name was often inconsistently applied to different tribes. Several important reasons conspired to bring about this complex state of synonymy:

1st. A great number of languages were spoken, and ofttimes the first names obtained for tribes were not the names used by themselves, but the names by which they were known to some other tribes.

2d. The governmental organization of the Indians was not understood, and the names for gentes, tribes, and confederacies were confounded.

3d. The advancing occupancy of the country by white men changed the habitat of the Indians, and in their migrations from point to point their names were changed.

Under these circumstances the nomenclature of Indian tribes became ponderous and the synonymy complex. To unravel this synonymy is a task of great magnitude. Early in the fiscal year the materials already collected on this subject were turned over to Professor Mason and clerical assistance given him, and he has prepared a card catalogue of North American tribes, exhibiting the synonymy, for use in the office. This is being constantly revised and enlarged, and will eventually be published

Professor Mason is also engaged in editing a grammar and dictionary of the Chata language, by the late Rev. Cyrus Byington, the manuscript of which was by Mrs. Byington turned over to the Bureau of Ethnology. The dictionary is Chata-English, and Professor Mason has prepared an English-Chata of about ten thousand words. He has also undertaken to enlarge the grammar by a further study of the language among the Indians themselves.

THE STUDY OF GESTURE SPEECH, BY BREVET LIEUT. COL. GARRICK MALLERY, U. S. A.

The growth of the languages of civilized peoples in their later stages may be learned from the study of recorded litera-

ture; and by comparative methods many interesting facts may be discovered pertaining to periods anterior to the development of writing.

In the study of peoples who have not passed beyond the tribal condition, laws of linguistic growth anterior to the written stage may be discovered. Thus, by the study of the languages of tribes and the languages of nations, the methods and laws of development are discovered from the low condition represented by the most savage tribe to the highest condition existing in the speech of civilized man. But there is a development of language anterior to this—a prehistoric condition—of profound interest to the scholar, because in it the beginnings of language—the first steps in the organization of articulate speech—are involved.

On this prehistoric stage, light is thrown from four sources:

1st. Infant speech, in which the development of the language of the race is epitomized.

2d. Gesture speech, which, among tribal peoples, never passes beyond the first stages of linguistic growth; and these stages are probably homologous to the earlier stages of oral speech.

3d. Picture writing, in which we again find some of the characteristics of prehistoric speech illustrated.

4th. It may be possible to learn something of the elements of which articulate speech is compounded by studying the inarticulate language of the lower animals.

The traits of gesture speech that seem to illustrate the condition of prehistoric oral language are found in the synthetic character of its signs. The parts of speech are not differentiated, and the sentence is not integrated; and this characteristic is more marked than in that of the lowest oral language yet studied. For this reason the facts of gesture speech constitute an important factor in the philosophy of language. Doubtless, care must be exercised in its use because of the advanced mental condition of the people who thus express their thought, but with due caution it may be advantageously used. In itself, independent of its relations to oral speech, the subject is of great interest.

In taking up this subject for original investigation, valuable published matter was found for comparison with that obtained by Colonel Mallery. His opportunities for collecting materials from the Indians themselves were abundant, as delegations of various tribes are visiting Washington from time to time, by which the information obtained during his travels was supplemented.

Again, the method of investigation by the assistance of a number of collaborators is well illustrated in this work, and contributions from various sources were made to the materials for study. The methods of obtaining these contributions will be more fully explained hereafter. One of the papers appended to this report was prepared by Colonel Mallery and relates to this subject.

During the continuance of the Survey of the Colorado River, and of the Rocky Mountain Region, the Director and his assistants made large collections of pictographs. When Colonel Mallery joined the corps these collections were turned over to him for more careful study. From various sources these pictographs are rapidly accumulating, and now the subject is assuming large proportions, and valuable results are expected.

An interesting relation between gesture speech and pictography consists in the discovery that to the delineation of natural objects is added the representation of gesture signs Materials in America are very abundant, and the prehistoric materials may be studied in the light given by the practices now found among Indian tribes.

STUDIES IN CENTRAL AMERICAN PICTURE WRITING, BY PROF. E. S. HOLDEN.

In Central America and Mexico, picture writing had progressed to a stage far in advance of anything discovered to the northward. Some of the most interesting of these are the rock inscriptions of Yucatan, Copan, Palenque, and other ruins of Central America.

Professor Holden has devoted much time to the study of

these inscriptions, for the purpose of discovering the characteristics of the pictographic method and deciphering the records, and the discoveries made by him are of great interest.

The Bureau has given him clerical assistance and such other aid as has been found possible, and a paper by him on this subject appears with this volume.

THE STUDY OF MORTUARY CUSTOMS, BY DR. H. C. YARROW.

The tribes of North America do not constitute a homogeneous people. In fact, more than seventy distinct linguistic stocks are discovered; and these are again divided by important distinctions of language. Among these tribes varying stages of culture have been reached, and these varying stages are exhibited in their habits and customs; and in a territory of such vast extent the physical environment affecting culture and customs is of great variety. Forest lands on the one hand, prairie lands on the other, unbroken plains and regions of rugged mountains, the cold, naked, desolate shores of sea and lake at the north and the dense chaparral of the torrid south, the valleys of quiet rivers and the cliffs and gorges of the cañon land—in all a great diversity of physical features are found, imposing diverse conditions for obtaining subsistence, in means and methods of house-building, creating diverse wants and furnishing diverse ways for their supply. Through diversities of languages and diversities of environment, diversity of traditions and diversity of institutions have been produced; so that in many important respects one tribe is never the counterpart of another.

These diversities have important limitations in the unity of the human race and the social, mental, and moral homogeneity that has everywhere controlled the progress of culture. The way of human progress is one road, though wide.

From the interesting field of research cultivated by Dr. Yarrow an abundant harvest will be gathered. The materials already accumulated are large, and are steadily increasing through his vigorous work. These materials constitute some-

thing more than a record of quaint customs and abhorrent rites in which morbid curiosity may revel. In them we find the evidences of traits of character and lines of thought that yet exist and profoundly influence civilization. Passions in the highest culture deemed most sacred—the love of husband and wife, parent and child, and kith and kin, tempering, beautifying, and purifying social life and culminating at death, have their origin far back in the early history of the race and leaven the society of savagery and civilization alike At either end of the line bereavement by death tears the heart and mortuary customs are symbols of mourning. The mystery which broods over the abbey where lie the bones of king and bishop, gathers over the ossuary where lie the bones of chief and shamin; for the same longing to solve the mysteries of life and death, the same yearning for a future life, the same awe of powers more than human, exist alike in the mind of the savage and the sage.

By such investigations we learn the history of culture in these important branches, and in a paper appended to this report Dr Yarrow presents some of the results of his studies.

INVESTIGATIONS RELATING TO CESSIONS OF LAND BY INDIAN TRIBES TO THE UNITED STATES, BY C. C. ROYCE.

When civilized man first came to America the continent was partially occupied by savage tribes, who obtained subsistence by hunting, by fishing, by gathering vegetal products, and by rude garden culture in cultivating small patches of ground. Semi-nomadic occupancy for such purposes was their tenure to the soil.

On the organization of the present government such theories of natural law were entertained that even this imperfect occupancy was held to be sufficient title. Publicists, jurists, and statesmen agreed that no portion of the waste of lands between the oceans could be acquired for the homes of the incoming civilized men but by purchase or conquest in just war. These theories were most potent in establishing practical relations,

and controlling governmental dealings with Indian tribes. They were adjudged to be dependent domestic nations.

Under this theory a system of Indian affairs grew up, the history of which, notwithstanding mistakes and innumerable personal wrongs, yet demonstrates the justice inherent in the public sentiment of the nation from its organization to the present time.

The difficulties subsisting in the adjustment of rights between savage and civilized peoples are multiform and complex. Ofttimes the virtues of one condition are the crimes of the other; happiness is misery; justice, injustice. Thus, when the civilized man would do the best, he gave the most offense. Under such circumstances it was impossible for wisdom and justice combined to avert conflict.

One chapter in the history of Indian affairs in America is a doleful tale of petty but costly and cruel wars; but there are other chapters more pleasant to contemplate.

The attempts to educate the Indians and teach them the ways of civilization have been many; much labor has been given, much treasure expended. While to a large extent all of these efforts have disappointed their enthusiastic promoters, yet good has been done, but rather by the personal labors of missionaries, teachers, and frontiersmen associating with Indians in their own land than by institutions organized and supported by wealth and benevolence not immediately in contact with savagery.

The great boon to the savage tribes of this country, unrecognized by themselves, and, to a large extent, unrecognized by civilized men, has been the presence of civilization, which, under the laws of acculturation, has irresistibly improved their culture by substituting new and civilized for old and savage arts, new for old customs—in short, transforming savage into civilized life. These unpremeditated civilizing influences have had a marked effect. The great body of the Indians of North America have passed through stages of culture in the last hundred years achieved by our Anglo-Saxon ancestors only by the slow course of events through a thousand years.

The Indians of the continent have not greatly diminished

in numbers, and the tribes longest in contact with civilization are increasing. The whole body of Indians is making rapid progress toward a higher culture, notwithstanding the petty conflicts yet occurring where the relations of the Indian tribes to our civilization have not yet been adjusted by the adoption upon their part of the first conditions of a higher life.

The part which the General Government, representing public sentiment, has done in the extinguishment of the vague Indian title to lands in the granting to them of lands for civilized homes on reservations and in severalty, in the establishment and support of schools, in the endeavors to teach them agriculture and other industrial arts—in these and many other ways justice and beneficence have been shown. Thus the history of the tribes of America from savagery to civilization is a history of three:

First. The history of acculturation—the effect of the presence of civilization upon savagery.

Second. The history of Indian wars that have arisen in part from the crimes and in part from the ignorance of either party.

Third. The history of civil Indian affairs. This last is divided into a number of parts:

1st. The extinguishment of the Indian title.

2d. The gathering of Indians upon reservations.

3d. The instrumentalities used to teach the Indians civilized industries; and

4th. The establishment and operation of schools.

From the organization of the Government to the present time these branches of Indian affairs have been in operation; lands have been bought and bought again; Indian tribes have been moved and moved again; reservations have been established and broken up. The Government has sought to give lands in severalty to the Indians from time to time along the whole course of the history of Indian affairs. Every experiment to teach the Indians the industries of civilization that could be devised has been tried, and from all of these there has resulted a mixture of failure and success.

A review of the century's history abundantly demonstrates that there is no short road to justice and peace; but a glance

at the present state of affairs exhibits the fact that these tribal communities will speedily be absorbed in the citizenship of the republic. No new method is to be adopted; the work is almost done; patient and persistent effort for a short future like that of the long past will accomplish all. It remains for us but to perfect the work wisely begun by the founders of the Government.

The industries and social institutions of the pristine Indians have largely been destroyed, and they are groping their way to civilized life. To the full accomplishment of this, three things are necessary:

1st. The organization of the civilized family, with its rules of inheritance in lineal descent.

2d. The civilized tenure of property in severalty must be substituted for communal property.

3d. The English language must be acquired, that the thoughts and ways of civilization may be understood.

To the history of Indian affairs much time has been given by the various members of the Bureau of Ethnology. One of the more important of these studies is that prosecuted by Mr. Royce in preparing a history of the cessions of lands by Indian tribes to the Government of the United States. A paper by him appended to this report illustrates the character of these investigations.

EXPLORATIONS BY MR. JAMES STEVENSON.

In the early exploration of the southwestern portion of the United States by Spanish travelers and conquerors, about sixty pueblos were discovered. These pueblos were communal villages, with architecture in untooled stone. In the conquest about half of the pueblos were destroyed. Thirty-one now remain, and two of these are across the line, on Mexican territory. The ruins of the pueblos yet remain, and some of them have been identified.

The Navajos, composed of a group of tribes of the Athabascan family, and the Coaninis, who live on the south side of

the Grand Cañon of the Colorado, are now known to be the people, or part of them at least, who were driven from the pueblos.

In addition to the ruins that have been made in historic times, others are found scattered throughout New Mexico, Arizona, Southern California, Utah, and Colorado. Whether the ancient inhabitants of these older ruins are represented by any of the tribes who now occupy the territory is not known. These pueblo people were not homogeneous. Among the pueblos now known at least five linguistic families are represented, but in their study a somewhat homogeneous stage of culture is presented.

In a general way the earlier or older ruins represent very rude structures, and the progress of development from the earlier to the later exhibits two classes of interesting facts. The structures gradually increase in size and improve in architecture. As the sites for new villages were selected, more easily defensible positions were chosen. The cliff dwellings thus belong to the later stage.

From the organization of the exploration of the Colorado River to the present time, the pueblos yet inhabited, as well as those in ruins, have been a constant subject of study, and on the organization of the Bureau much valuable matter had already been collected. Early in the fiscal year a party was organized to continue explorations in this field, and placed under the direction of Mr. James Stevenson. The party left Washington on the first of August last.

Mr. Frank H. Cushing, of the Smithsonian Institution, and Mr. J. K. Hillers, photographer of the Bureau, with a number of general assistants, accompanied Mr. Stevenson. The party remained in the field until early winter, studying the ruins and making large and valuable collections of pottery, stone implements, etc., and Mr. Hillers succeeded in making an excellent suite of photographs.

When Mr. Stevenson returned with his party to Washington, Mr. Cushing remained at Zuñi to study the language, mythology, sociology, and art of that the most interesting pueblo. An illustrated catalogue of the collections made by Mr. Steven-

son has been printed. It was intended to form an appendix to this report, but the volume has grown to such a size that it is thought best to issue it with the next report.

RESEARCHES AMONG THE WINTUNS, BY J. W. POWELL.

During the fall the Director made an expedition into Northern California for the purpose of studying the Wintuns. Much linguistic, sociologic, and technologic material was collected, and more thorough anthropologic researches initiated among a series of tribes heretofore neglected.

THE PREPARATION OF MANUALS FOR USE IN AMERICAN RESEARCH.

In the second plan of operations adopted by the Bureau, that of promoting the researches of collaborators, aid in publication and, to some extent, in preparation of scientific papers, has been given, and by various ways new investigations and lines of research have been initiated. For this latter purpose a series of manuals with elementary discussions and schedules of interrogatories have been prepared.

The first is entitled Introduction to the Study of Indian Languages, by J. W. Powell.

This has been widely distributed throughout North America, and the collection of a large body of linguistic material has resulted therefrom

A second volume of this character is entitled Introduction to the Study of Mortuary Customs, by Dr. H. C. Yarrow.

This also has been widely circulated with abundant success.

A third hand-book of the same character is entitled Introduction to the Study of Sign Language, by Colonel Mallery.

This was circulated in like manner with like results.

A second edition of the Introduction to the Study of Indian Languages, enlarged to meet the advanced wants of the time, has been prepared.

The papers by Dr. Yarrow and Colonel Mallery, and the catalogue of manuscripts in the Bureau, prepared by Mr. Pilling, appended to this volume, will illustrate the value of these agencies.

It is proposed in the near future to prepare similar volumes, as follows:

Introduction to the Study of Medicine Practices of the North American Indians;

Introduction to the Study of the Tribal Governments of North America;

Introduction to the Study of North American Mythology.

These additional manuals are nearly ready. Still others are projected, and it is hoped that the field of North American anthropology will be entirely covered by them. The series will then be systematically combined in a Manual of Anthropology for use in North America.

SYSTEMATIC CLASSIFICATION OF THE NORTH AMERICAN TRIBES.

There is in course of preparation by the Bureau a linguistic classification of North American tribes, with an atlas exhibiting their priscan homes, or the regions inhabited by them at the time they were discovered by white men.

The foregoing sketch of the Bureau, for the first fiscal year of its existence, is designed to set forth the plan on which it is organized and the methods of research adopted, and the papers appended thereto will exhibit the measure of success attained.

It is the purpose of the Bureau of Ethnology to organize anthropologic research in America

ACCOMPANYING PAPERS.

SMITHSONIAN INSTITUTION——BUREAU OF ETHNOLOGY.

J. W. POWELL, DIRECTOR.

ON THE EVOLUTION OF LANGUAGE,

AS EXHIBITED IN

THE SPECIALIZATION OF THE GRAMMATIC PROCESSES, THE DIFFERENTIATION OF THE PARTS OF SPEECH, AND THE INTEGRATION OF THE SENTENCE; FROM A STUDY OF INDIAN LANGUAGES.

BY

J. W. POWELL.

ON THE EVOLUTION OF LANGUAGE,

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By J. W. Powell.

Possible ideas and thoughts are vast in number. A distinct word for every distinct idea and thought would require a vast vocabulary. The problem in language is to express many ideas and thoughts with comparatively few words.

Again, in the evolution of any language, progress is from a condition where few ideas are expressed by a few words to a higher, where many ideas are expressed by the use of many words; but the number of all possible ideas or thoughts expressed is increased greatly out of proportion with the increase of the number of words.

And still again, in all of those languages which have been most thoroughly studied, and by inference in all languages, it appears that the few original words used in any language remain as the elements for the greater number finally used. In the evolution of a language the introduction of absolutely new material is a comparatively rare phenomenon. The old material is combined and modified in many ways to form the new.

How has the small stock of words found as the basis of a language been thus combined and modified?

The way in which the old materials have been used gives rise to what will here be denominated THE GRAMMATIC PROCESSES.

I.—THE PROCESS BY COMBINATION.

Two or more words may be united to form a new one, or to perform the office of a new one, and four methods or stages of combination may be noted.

a. By *juxtaposition*, where the two words are placed together and yet remain as distinct words. This method is illustrated in Chinese, where the words in the combination when taken alone seldom give a clew to their meaning when placed together.

b. By *compounding*, where two words are made into one, in which case the original elements of the new word remain in an unmodified condition, as in *house-top*, *rain-bow*, *tell-tale*.

c. By *agglutination*, in which case one or more of the elements entering into combination to form the new word is somewhat changed—the elements are fused together. Yet this modification is not so great as to essentially obscure the primitive words, as in *truthful*, where we easily recognize the original words *truth* and *full*; and *holiday*, in which *holy* and *day* are recognized.

d. By *inflection.* Here one or more of the elements entering into the compound has been so changed that it can scarcely be recognized. There is a constant tendency to economy in speech by which words are gradually shortened as they are spoken by generation after generation. In those words which are combinations of others there are certain elements that wear out more rapidly than others. Where some particular word is combined with many other different words the tendency to modify by wear this oft-used element is great. This is more especially the case where the combined word is used in certain categories of combinations, as where particular words are used to denote tense in the verb; thus, *did* may be used in combination with a verb to denote past time until it is worn down to the sound of *d.* The same wear occurs where particular words are used to form cases in nouns, and a variety of illustrations might be given. These categories constitute conjugations and declensions, and for convenience such combinations may be called paradigmatic. Then the oft-repeated elements of paradigmatic combinations are apt to become excessively worn and modified, so that the primitive words or themes to which they are attached seem to be but slightly changed by the addition. Under these circumstances combination is called inflection.

As a morphologic process, no well-defined plane of demarkation between these four methods of combination can be drawn, as one runs into another; but, in general, words may be said to be juxtaposed when two words being placed together the combination performs the function of a new word, while in form the two words remain separate.

Words may be said to be compound when two or more words are combined to form one, no change being made in either. Words may be said to be agglutinated when the elementary words are changed but slightly, *i. e.*, only to the extent that their original forms are not greatly obscured; and words may be said to be inflected when in the combination the oft-repeated element or formative part has been so changed that its origin is obscured. These inflections are used chiefly in the paradigmatic combinations.

In the preceding statement it has been assumed that there can be recognized, in these combinations of inflection, a theme or root, as it is sometimes called, and a formative element. The formative element is used with a great many different words to define or qualify them; that is, to indicate mode, tense, number, person, gender, etc., of verbs, nouns, and other parts of speech.

When in a language juxtaposition is the chief method of combination,

there may also be distinguished two kinds of elements, in some sense corresponding to themes and formative parts. The theme is a word the meaning of which is determined by the formative word placed by it; that is, the theme is a word having many radically different meanings; with which meaning it is to be understood is determined only by the formative word, which thus serves as its label. The ways in which the theme words are thus labeled by the formative word are very curious, but the subject cannot be entered into here.

When words are combined by compounding, the formative elements cannot so readily be distinguished from the theme; nor for the purposes under immediate consideration can compounding be well separated from agglutination.

When words are combined by agglutination, theme and formative part usually appear. The formative parts are affixes; and affixes may be divided into three classes, prefixes, suffixes, and infixes. These affixes are often called incorporated particles.

In those Indian languages where combination is chiefly by agglutination, that is, by the use of affixes, *i. e.*, incorporated particles, certain parts of the conjugation of the verb, especially those which denote gender, number, and person, are effected by the use of article pronouns; but in those languages where article pronouns are not found the verbs are inflected to accomplish the same part of their conjugation. Perhaps, when we come more fully to study the formative elements in these more highly inflected languages, we may discover in such elements greatly modified, *i. e.*, worn out, incorporated pronouns.

II.—THE PROCESS BY VOCALIC MUTATION.

Here, in order to form a new word, one or more of the vowels of the old word are changed, as in *man—men*, where an *e* is substituted for *a*; *ran—run*, where *u* is substituted for *a*; *lead—led*, where *e*, with its proper sound, is substituted for *ea* with its proper sound. This method is used to a very limited extent in English. When the history of the words in which it occurs is studied it is discovered to be but an instance of the wearing out of the different elements of combined words; but in the Hebrew this method prevails to a very large extent, and scholars have not yet been able to discover its origin in combination as they have in English. It may or may not have been an original grammatic process, but because of its importance in certain languages it has been found necessary to deal with it as a distinct and original process.

III.—THE PROCESS BY INTONATION.

In English, new words are not formed by this method, yet words are intoned for certain purposes, chiefly rhetorical. We use the rising intonation (or inflection, as it is usually called) to indicate that a question is asked, and various effects are given to speech by the various intonations of rhetoric. But this process is used in other languages to form new words with which to express new ideas. In Chinese eight distinct intonations are found, by the use of which one word may be made to express eight different ideas, or perhaps it is better to say that eight words may be made of one.

IV.—THE PROCESS BY PLACEMENT.

The place or position of a word may affect its significant use. Thus in English we say *John struck James.* By the position of those words to each other we know that John is the actor, and that James receives the action.

By the grammatic processes language is organized. Organization postulates the differentiation of organs and their combination into integers. The integers of language are sentences, and their organs are the parts of speech. Linguistic organization, then, consists in the differentiation of the parts of speech and the integration of the sentence. For example, let us take the words *John*, *father*, and *love.* *John* is the name of an individual; *love* is the name of a mental action, and *father* the name of a person. We put them together, John loves father, and they express a thought; *John* becomes a noun, and is the subject of the sentence; *love* becomes a verb, and is the predicant; *father* a noun, and is the object; and we now have an organized sentence. A sentence requires parts of speech, and parts of speech are such because they are used as the organic elements of a sentence.

The criteria of rank in languages are, first, grade of organization, *i. e.*, the degree to which the grammatic processes and methods are specialized, and the parts of speech differentiated; second, sematologic content, that is, the body of thought which the language is competent to convey.

The grammatic processes may be used for three purposes:

First, for *derivation*, where a new word to express a new idea is made by combining two or more old words, or by changing the vowel of one word, or by changing the intonation of one word.

Second, for *modification*, a word may be qualified or defined by the processes of combination, vocalic mutation or intonation.

It should here be noted that the plane between derivation and qualification is not absolute.

Third, for *relation*. When words as signs of ideas are used together to express thought, the relation of the words must be expressed by some means. In English the relation of words is expressed both by placement and combination, *i. e.*, inflection for agreement.

It should here be noted that paradigmatic inflections are used for two distinct purposes, qualification and relation. A word is qualified by inflection when the idea expressed by the inflection pertains to the idea expressed by the word inflected; thus a noun is qualified by inflection when its number and gender are expressed. A word is related by inflection when the office of the word in the sentence is pointed out thereby; thus, nouns are related by case inflections; verbs are related by inflections for gender, number, and person. All inflection for agreement is inflection for relation.

In English, three of the grammatic processes are highly specialized.

Combination is used chiefly for derivation, but to some slight extent for qualification and relation in the paradigmatic categories. But its use in this manner as compared with many other languages has almost disappeared.

Vocalic mutation is used to a very limited extent and only by accident, and can scarcely be said to belong to the English language.

Intonation is used as a grammatic process only to a limited extent—simply to assist in forming the interrogative and imperative modes. Its use here is almost rhetorical; in all other cases it is purely rhetorical.

Placement is largely used in the language, and is highly specialized, performing the office of exhibiting the relations of words to each other in the sentence; *i. e.*, it is used chiefly for syntactic relation.

Thus one of the four processes does not belong to the English language; the others are highly specialized.

The purposes for which the processes are used are *derivation*, *modification*, and *syntactic relation*.

Derivation is accomplished by combination.

Modification is accomplished by the differentiation of adjectives and adverbs, as words, phrases, and clauses.

Syntactic relation is accomplished by placement. Syntactic relation must not be confounded with the relation expressed by prepositions. Syntactic relation is the relation of the parts of speech to each other as integral parts of a sentence. Prepositions express relations of thought of another order. They relate words to each other as words.

Placement relates words to each other as parts of speech.

In the Indian tongues combination is used for all three purposes, performing the three different functions of derivation, modification, and re-

lation. Placement, also, is used for relation, and for both kinds of relation, syntactic and prepositional.

With regard, then, to the processes and purposes for which they are used, we find in the Indian languages a low degree of specialization; processes are used for diverse purposes, and purposes are accomplished by diverse processes.

DIFFERENTIATION OF THE PARTS OF SPEECH.

It is next in order to consider to what degree the parts of speech are differentiated in Indian languages, as compared with English.

Indian nouns are extremely connotive, that is, the name does more than simply denote the thing to which it belongs; in denoting the object it also assigns to it some quality or characteristic. Every object has many qualities and characteristics, and by describing but a part of these the true office of the noun is but imperfectly performed. A strictly denotive name expresses no one quality or character, but embraces all qualities and characters.

In *Ute* the name for bear is *he seizes*, or *the hugger*. In this case the verb is used for the noun, and in so doing the Indian names the bear by predicating one of his characteristics. Thus noun and verb are undifferentiated. In *Seneca* the north is *the sun never goes there*, and this sentence may be used as adjective or noun; in such cases noun, adjective, verb, and adverb are found as one vocable or word, and the four parts of speech are undifferentiated. In the *Pavänt* language a school-house is called *pó-kûnt-în-îñ-yî-kän*. The first part of the word, *pó-kûnt*, signifies *sorcery is practiced*, and is the name given by the Indians to any writing, from the fact that when they first learned of writing they supposed it to be a method of practicing sorcery; *în-îñ-yî* is the verb signifying *to count*, and the meaning of the word has been extended so as to signify *to read; kän* signifies wigwam, and is derived from the verb *käri*, *to stay*. Thus the name of the school-house literally signifies *a staying place where sorcery is counted*, or where papers are read. The *Pavänt* in naming a school-house describes the purpose for which it is used. These examples illustrate the general characteristics of Indian nouns; they are excessively connotive; a simply denotive name is rarely found. In general their name-words predicate some attribute of the object named, and thus noun, adjective, and predicant are undifferentiated.

In many Indian languages there is no separate word for *eye*, *hand*, *arm*, or other parts and organs of the body, but the word is found with an incorporated or attached pronoun signifying *my* hand, *my* eye; *your* hand, *your* eye; *his* hand, *his* eye, etc., as the case may be. If the Indian, in naming these parts, refers to his own body, he says *my;* if he refers to

the body of the person to whom he is speaking, he says *your*, &c. If an Indian should find a detached foot thrown from the amputating-table of an army field hospital, he would say something like this: I have found somebody *his foot*. The linguistic characteristic is widely spread, though not universal.

Thus the Indian has no command of a fully differentiated noun expressive of *eye*, *hand*, *arm*, or other parts and organs of the body.

In the pronouns we often have the most difficult part of an Indian language. Pronouns are only to a limited extent independent words.

Among the free pronouns the student must early learn to distinguish between the personal and the demonstrative. The demonstrative pronouns are more commonly used. The Indian is more accustomed to say *this* person or thing, *that* person or thing, than *he*, *she*, or *it*. Among the free personal pronouns the student may find an equivalent of the pronoun *I*, another signifying *I and you;* perhaps another signifying *I and he*, and one signifying *we*, *more than two*, including the speaker and those present; and another including the speaker and persons absent. He will also find personal pronouns in the second and third person, perhaps with singular, dual, and plural forms.

To a large extent the pronouns are incorporated in the verbs as prefixes, infixes, or suffixes. In such cases we will call them article pronouns. These article pronouns point out with great particularity the person, number, and gender, both of subject and object, and sometimes of the indirect object. When the article pronouns are used the personal pronouns may or may not be used; but it is believed that the personal pronouns will always be found. Article pronouns may not always be found. In those languages which are characterized by them they are used alike when the subject and object nouns are expressed and when they are not. The student may at first find some difficulty with these article pronouns. Singular, dual, and plural forms will be found. Sometimes distinct incorporated particles will be used for subject and object, but often this will not be the case. If the subject only is expressed, one particle may be used; if the object only is expressed, another particle; but if subject and object are expressed an entirely different particle may stand for both.

But it is in the genders of these article pronouns that the greatest difficulty may be found. The student must entirely free his mind of the idea that gender is simply a distinction of sex. In Indian tongues, genders are usually methods of classification primarily into animate and inanimate. The animate may be again divided into male and female, but this is rarely the case. Often by these genders all objects are classified by characteristics found in their attitudes or supposed constitution. Thus we may have the animate and inanimate, one or both, divided into the *standing*, the *sitting*, and the *lying;* or they may be divided into the *watery*, the *mushy*, the *earthy*, the *stony*, the *woody*, and the *fleshy*. The gender of these article pronouns has rarely been worked out in any

language. The extent to which these classifications enter into the article pronouns is not well known. The subject requires more thorough study. These incorporated particles are here called *article* pronouns. In the conjugation of the verb they take an important part, and have by some writers been called *transitions*. Besides pointing out with particularity the person, number, and gender or the subject and object, they perform the same offices that are usually performed by those inflections of the verb that occur to make them agree in gender, number, and person with the subject. In those Indian languages where the article pronouns are not found, and the personal pronouns only are used, the verb is usually inflected to agree with the subject or object, or both, in the same particulars.

The article pronouns as they point out person, number, gender, and case of the subject and object, are not simple particles, but are to a greater or lesser extent compound; their component elements may be broken apart and placed in different parts of the verb. Again, the article pronoun in some languages may have its elements combined into a distinct word in such a manner that it will not be incorporated in the verb, but will be placed immediately before it. For this reason the term *article pronoun* has been chosen rather than *attached pronoun*. The older term, *transition*, was given to them because of their analogy in function to verbal inflections.

Thus the verb of an Indian language contains within itself incorporated article pronouns which point out with great particularity the gender, number, and person of the subject and object. In this manner verb, pronoun, and adjective are combined, and to this extent these parts of speech are undifferentiated.

In some languages the article pronoun constitutes a distinct word, but whether free or incorporated it is a complex tissue of adjectives.

Again, nouns sometimes contain particles within themselves to predicate possession, and to this extent nouns and verbs are undifferentiated.

The verb is relatively of much greater importance in an Indian tongue than in a civilized language. To a large extent the pronoun is incorporated in the verb as explained above, and thus constitutes a part of its conjugation.

Again, adjectives are used as intransitive verbs, as in most Indian languages there is no verb *to be* used as a predicant or copula. Where in English we would say *the man is good* the Indian would say *that man good*, using the adjective as an intransitive verb, *i. e.*, as a predicant. If he desired to affirm it in the past tense, the intransitive verb *good* would be inflected, or otherwise modified, to indicate the tense; and so, in like manner, all adjectives when used to predicate can be modified to indicate mode, tense, number, person, &c., as other intransitive verbs.

Adverbs are used as intransitive verbs. In English we may say *he is there;* the Indian would say *that person there* usually preferring

the demonstrative to the personal pronoun. The adverb *there* would, therefore, be used as a predicant or intransitive verb, and might be conjugated to denote different modes, tenses, numbers, persons, etc. Verbs will often receive adverbial qualifications by the use of incorporated particles, and, still further, verbs may contain within themselves adverbial limitations without our being able to trace such meanings to any definite particles or parts of the verb.

Prepositions are intransitive verbs. In English we may say *the hat is on the table;* the Indian would say *that hat on table;* or he might change the order, and say *that hat table on;* but the preposition *on* would be used as an intransitive verb to predicate, and may be conjugated. Prepositions may often be found as particles incorporated in verbs, and, still further, verbs may contain within themselves prepositional meanings without our being able to trace such meanings to any definite particles within the verb. But the verb connotes such ideas that something is needed to complete its meaning, that something being a limiting or qualifying word, phrase, or clause. Prepositions may be prefixed, infixed, or suffixed to nouns, *i. e.*, they may be particles incorporated in nouns.

Nouns may be used as intransitive verbs under the circumstances when in English we would use a noun as the complement of a sentence after the verb *to be.*

The verb, therefore, often includes within itself subject, direct object, indirect object, qualifier, and relation-idea. Thus it is that the study of an Indian language is, to a large extent, the study of its verbs.

Thus adjectives, adverbs, prepositions, and nouns are used as intransitive verbs; and, to such extent, adjectives, adverbs, prepositions, nouns, and verbs are undifferentiated.

From the remarks above, it will be seen that Indian verbs often include within themselves meanings which in English are expressed by adverbs and adverbial phrases and clauses. Thus the verb may express within itself direction, manner, instrument, and purpose, one or all, as the verb *to go* may be represented by a word signifying *go home;* another, *go away from home;* another, *go to a place other than home;* another, *go from a place other than home;* one, *go from this place*, with reference to home; one, *to go up;* another, *to go down;* one, *go around;* and, perhaps, there will be a verb *go up hill;* another, *go up a valley;* another, *go up a river*, etc. Then we may have *to go on foot*, *to go on horseback*, *to go in a canoe;* still another, *to go for water;* another *for wood*, etc. Distinct words may be used for all these, or a fewer number used, and these varied by incorporated particles. In like manner, the English verb *to break* may be represented by several words, each of which will indicate the manner of performing the act or the instrument with which it is done. Distinct words may be used, or a common word varied with incorporated particles.

The verb *to strike* may be represented by several words, signifying

severally *to strike with the fist, to strike with a club, to strike with the open hand, to strike with a whip, to strike with a switch*, to strike with a flat instrument, etc. A common word may be used with incorporated particles or entirely different words used.

Mode in an Indian tongue is a rather difficult subject. Modes analogous to those of civilized tongues are found, and many conditions and qualifications appear in the verb which in English and other civilized languages appear as adverbs, and adverbial phrases and clauses. No plane of separation can be drawn between such adverbial qualifications and true modes. Thus there may be a form of the verb, which shows that the speaker makes a declaration as certain, *i. e.*, an *indicative* mode; another which shows that the speaker makes a declaration with doubt, *i. e.*, a *dubitative* mode; another that he makes a declaration on hearsay, *i. e.*, a *quotative* mode; another form will be used in making a command, giving an *imperative* mode; another in imploration, *i. e.*, an *implorative* mode; another form to denote permission, *i. e.*, a *permissive* mode; another in negation, *i. e.*, a *negative* mode; another form will be used to indicate that the action is simultaneous with some other action, *i. e.*, a *simulative* mode; another to denote desire or wish that something be done, *i. e.*, a *desiderative* mode; another that the action ought to be done, *i. e.*, an *obligative* mode; another that action is repetitive from time to time, *i. e.*, a *frequentative* mode; another that action is caused, *i. e.*, a *causative* mode, etc.

These forms of the verb, which we are compelled to call modes, are of great number. Usually with each of them a particular modal particle or incorporated adverb will be used; but the particular particle which gives the qualified meaning may not always be discovered; and in one language a different word will be introduced, where in another the same word will be used with an incorporated particle.

It is stated above that incorporated particles may be used to indicate direction, manner, instrument, and purpose; in fact, any adverbial qualification whatever may be made by an incorporated particle instead of an adverb as a distinct word.

No line of demarkation can be drawn between these adverbial particles and those mentioned above as modal particles. Indeed it seems best to treat all these forms of the verb arising from incorporated particles as distinct modes. In this sense, then, an Indian language has a multiplicity of modes. It should be further remarked that in many cases these modal or adverbial particles are excessively worn, so that they may appear as additions or changes of simple vowel or consonant sounds. When incorporated particles are thus used, distinct adverbial words, phrases, or clauses may also be employed, and the idea expressed twice.

In an Indian language it is usually found difficult to elaborate a system of tenses in paradigmatic form. Many tenses or time particles are found incorporated in verbs. Some of these time particles are excessively

worn, and may appear rather as inflections than as incorporated particles. Usually rather distinct present, past, and future tenses are discovered; often a remote or ancient past, and less often an immediate future. But great specification of time in relation to the present and in relation to other time is usually found.

It was seen above that adverbial particles cannot be separated from modal particles. In like manner tense particles cannot be separated from adverbial and modal particles.

In an Indian language adverbs are differentiated only to a limited extent. Adverbial qualifications are found in the verb, and thus there are a multiplicity of modes and tenses, and no plane of demarkation can be drawn between mode and tense. From preceding statements it will appear that a verb in an Indian tongue may have incorporated with it a great variety of particles, which can be arranged in three general classes, *i. e.*, pronominal, adverbial, and prepositional.

The pronominal particles we have called article pronouns; they serve to point out a variety of characteristics in the subject, object, and indirect object of the verb. They thus subserve purposes which in English are subserved by differentiated adjectives as distinct parts of speech. They might, therefore, with some propriety, have been called adjective particles, but these elements perform another function; they serve the purpose which is usually called *agreement in language;* that is, they make the verb agree with the subject and object, and thus indicate the syntactic relation between subject, object, and verb. In this sense they might with propriety have been called relation particles, and doubtless this function was in mind when some of the older grammarians called them transitions.

The adverbial particles perform the functions of voice, mode, and tense, together with many other functions that are performed in languages spoken by more highly civilized people by differentiated adverbs, adverbial phrases, and clauses.

The prepositional particles perform the function of indicating a great variety of subordinate relations, like the prepositions used as distinct parts of speech in English.

By the demonstrative function of some of the pronominal particles, they are closely related to adverbial particles, and adverbial particles are closely related to prepositional particles, so that it will be sometimes difficult to say of a particular particle whether it be pronominal or adverbial, and of another particular particle whether it be adverbial or prepositional.

Thus the three classes of particles are not separated by absolute planes of demarkation.

The use of these particles as parts of the verb; the use of nouns, adjectives, adverbs, and prepositions as intransitive verbs; and the direct use of verbs as nouns, adjectives, and adverbs, make the study of an Indian tongue to a large extent the study of its verbs.

To the extent that voice, mode, and tense are accomplished by the use of agglutinated particles or inflections, to that extent adverbs and verbs are undifferentiated.

To the extent that adverbs are found as incorporated particles in verbs, the two parts of speech are undifferentiated.

To the extent that prepositions are particles incorporated in the verb, prepositions and verbs are undifferentiated.

To the extent that prepositions are affixed to nouns, prepositions and nouns are undifferentiated.

In all these particulars it is seen that the Indian tongues belong to a very low type of organization. Various scholars have called attention to this feature by describing Indian languages as being holophrastic, polysynthetic, or synthetic. The term synthetic is perhaps the best, and may be used as synonymous with undifferentiated.

Indian tongues, therefore, may be said to be highly synthetic in that their parts of speech are imperfectly differentiated.

In these same particulars the English language is highly organized, as the parts of speech are highly differentiated. Yet the difference is one of degree, not of kind.

To the extent in the English language that inflection is used for qualification, as for person, number, and gender of the noun and pronoun, and for mode and tense in the verb, to that extent the parts of speech are undifferentiated. But we have seen that inflection is used for this purpose to a very slight extent.

There is yet in the English language one important differentiation which has been but partially accomplished. Verbs as usually considered are undifferentiated parts of speech; they are nouns and adjectives, one or both, and predicants. The predicant simple is a distinct part of speech. The English language has but one, the verb *to be*, and this is not always a pure predicant, for it sometimes contains within itself an adverbial element when it is conjugated for mode and tense, and a connective element when it is conjugated for agreement. With adjectives and nouns this verb is used as a predicant. In the passive voice also it is thus used, and the participles are nouns or adjectives. In what is sometimes called the progressive form of the active voice nouns and adjectives are differentiated in the participles, and the verb "to be" is used as a predicant. But in what is usually denominated the active voice of the verb, the English language has undifferentiated parts of speech. An examination of the history of the verb *to be* in the English language exhibits the fact that it is coming more and more to be used as the predicant; and what is usually called the common form of the active voice is coming more and more to be limited in its use to special significations.

The real active voice, indicative mode, present tense, first person, singular number, of the verb *to eat*, is *am eating*. The expression *I eat*, signifies *I am accustomed to eat*. So, if we consider the common form of

the active voice throughout its entire conjugation, we discover that many of its forms are limited to special uses.

Throughout the conjugation of the verb the auxiliaries are predicants, but these auxiliaries, to the extent that they are modified for mode, tense, number, and person, contain adverbial and connective elements.

In like manner many of the lexical elements of the English language contain more than one part of speech: *To ascend* is *to go up; to descend* is *to go down;* and *to depart* is *to go from.*

Thus it is seen that the English language is also synthetic in that its parts of speech are not completely differentiated. The English, then, differs in this respect from an Indian language only in degree.

In most Indian tongues no pure predicant has been differentiated, but in some the verb *to be*, or predicant, has been slightly developed, chiefly to affirm existence in a place.

It will thus be seen that by the criterion of organization Indian tongues are of very low grade.

It need but to be affirmed that by the criterion of sematologic content Indian languages are of a very low grade. Therefore the frequently-expressed opinion that the languages of barbaric peoples have a more highly organized grammatic structure than the languages of civilized peoples has its complete refutation.

It is worthy of remark that all paradigmatic inflection in a civilized tongue is a relic of its barbaric condition. When the parts of speech are fully differentiated and the process of placement fully specialized, so that the order of words in sentences has its full significance, no useful purpose is subserved by inflection.

Economy in speech is the force by which its development has been accomplished, and it divides itself properly into economy of utterance and economy of thought. Economy of utterance has had to do with the phonic constitution of words; economy of thought has developed the sentence.

All paradigmatic inflection requires unnecessary thought. In the clause *if he was here*, *if* fully expresses the subjunctive condition, and it is quite unnecessary to express it a second time by using another form of the verb *to be.* And so the people who are using the English language are deciding, for the subjunctive form is rapidly becoming obsolete with the long list of paradigmatic forms which have disappeared.

Every time the pronoun *he*, *she*, or *it* is used it is necessary to think of the sex of its antecedent, though in its use there is no reason why sex should be expressed, say, one time in ten thousand. If one pronoun non-expressive of gender were used instead of the three, with three gender adjectives, then in nine thousand nine hundred and ninety-nine cases the speaker would be relieved of the necessity of an unnecessary thought, and in the one case an adjective would fully express it. But when these inflections are greatly multiplied, as they are in the Indian languages, alike with the Greek and Latin, the speaker is compelled in the

choice of a word to express his idea to think of a multiplicity of things which have no connection with that which he wishes to express.

A *Ponka* Indian, in saying that a man killed a rabbit, would have to say the man, he, one, animate, standing, in the nominative case, purposely killed, by shooting an arrow, the rabbit, he, the one, animate, sitting, in the objective case; for the form of a verb to kill would have to be selected, and the verb changes its form by inflection and incorporated particles to denote person, number, and gender as animate or inanimate, and gender as standing, sitting, or lying, and case; and the form of the verb would also express whether the killing was done accidentally or purposely, and whether it was by shooting or by some other process, and, if by shooting, whether by bow and arrow, or with a gun; and the form of the verb would in like manner have to express all of these things relating to the object; that is, the person, number, gender, and case of the object; and from the multiplicity of paradigmatic forms of the verb to kill this particular one would have to be selected. Perhaps one time in a million it would be the purpose to express all of these particulars, and in that case the Indian would have the whole expression in one compact word, but in the nine hundred and ninety-nine thousand nine hundred and ninety-nine cases all of these particulars would have to be thought of in the selection of the form of the verb, when no valuable purpose would be accomplished thereby.

In the development of the English, as well as the French and German, linguistic evolution has not been in vain.

Judged by these criteria, the English stands alone in the highest rank; but as a written language, in the way in which its alphabet is used, the English has but emerged from a barbaric condition.

SMITHSONIAN INSTITUTION——BUREAU OF ETHNOLOGY.

J. W. POWELL, DIRECTOR.

SKETCH

OF THE

MYTHOLOGY OF THE NORTH AMERICAN INDIANS.

BY

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THE GENESIS OF PHILOSOPHY.

The wonders of the course of nature have ever challenged attention. In savagery, in barbarism, and in civilization alike, the mind of man has sought the explanation of things. The movements of the heavenly bodies, the change of seasons, the succession of night and day, the powers of the air, majestic mountains, ever-flowing rivers, perennial springs, the flight of birds, the gliding of serpents, the growth of trees, the blooming of flowers, the forms of storm-carved rocks, the mysteries of life and death, the institutions of society—many are the things to be explained. The yearning to know is universal. *How* and *why* are everlasting interrogatories profoundly instinct in humanity. In the evolution of the human mind, the instinct of cosmic interrogation follows hard upon the instinct of self-preservation.

In all the operations of nature, man's weal and woe are involved. A cold wave sweeps from the north—rivers and lakes are frozen, forests are buried under snows, and the fierce winds almost congeal the life-fluids of man himself, and indeed man's sources of supply are buried under the rocks of water. At another time the heavens are as brass, and the clouds come and go with mockery of unfulfilled promises of rain, the fierce midsummer sun pours its beams upon the sands, and blasts heated in the furnace of the desert sear the vegetation; and the fruits, which in more congenial seasons are subsistence and luxury, shrivel before the eyes of famishing men. A river rages and destroys the adjacent valley with its flood. A mountain bursts forth with its rivers of fire, the land is buried and the people are swept away. Lightning shivers a tree and rends a skull. The silent, unseen powers of nature, too, are at work bringing pain or joy, health or sickness, life or death, to mankind. In like manner man's welfare is involved in all the institutions of society. *How* and *why* are the questions asked about all these things—questions springing from the deepest instinct of self-preservation.

In all stages of savage, barbaric, and civilized inquiry, every question has found an answer, every *how* has had its *thus*, every *why* its *because*. The sum of the answers to the questions raised by any people constitute its philosophy; hence all peoples have had philosophies consisting of their accepted explanation of things. Such a philosophy must necessarily result from the primary instincts developed in man in the early progress of his differentiation from the beast. This I postulate: if demonstration is necessary, demonstration is at hand. Not only has every people a philosophy, but every stage of culture is characterized by its stage of philosophy. Philosophy has been unfolded with the evolution of the human understanding. The history of philosophy is the history of human opinions from the earlier to the later days—from the lower to the higher culture.

In the production of a philosophy, phenomena must be *discerned*, *discriminated*, *classified*. Discernment, discrimination, and classification are the processes by which a philosophy is developed. In studying the philosophy of a people at any stage of culture, to understand what such a people entertain as the sum of their knowledge, it is necessary that we should understand what phenomena they saw, heard, felt, discerned; what discriminations they made, and what resemblances they seized upon as a basis for the classification on which their explanations rested. A philosophy will be higher in the scale, nearer the truth, as the discernment is wider, the discrimination nicer, and the classification better.

The sense of the savage is dull compared with the sense of the civilized man. There is a myth current in civilization to the effect that the barbarian has highly developed perceptive faculties. It has no more foundation than the myth of the wisdom of the owl. A savage sees but few sights, hears but few sounds, tastes but few flavors, smells but few odors; his whole sensuous life is narrow and blunt, and his facts that are made up of the combination of sensuous impressions are few. In comparison, the civilized man has his vision extended away toward the infinitesimal and away toward the infinite; his perception of sound is multiplied to the comprehension of rapturous symphonies; his perception of taste is increased to the enjoyment of delicious viands; his perception of smell is developed to the appreciation of most exquisite perfumes; and his facts that are made up of the combination of sensuous impressions are multiplied beyond enumeration. The stages of discernment from the lowest savage to the highest civilized man constitute a series the end of which is far from the beginning.

If the discernment of the savage is little, his discrimination is less. All his sensuous perceptions are confused; but the confusion of confusion is that universal habit of savagery—the confusion of the objective with the subjective—so that the savage sees, hears, tastes, smells, feels the imaginings of his own mind. Subjectively determined sensuous processes are diseases in civilization, but normal, functional methods in savagery.

The savage philosopher classifies by obvious resemblances—analogic characters. The civilized philosopher classifies by essential affinitives—homologic characteristics—and the progress of philosophy is marked by changes from analogic categories to homologic categories.

TWO GRAND STAGES OF PHILOSOPHY.

There are two grand stages of philosophy—the mythologic and scientific. In the first, all phenomena are explained by analogies derived from subjective human experiences; in the latter, phenomena are explained as orderly successions of events.

In sublime egotism, man first interprets the cosmos as an extension of himself; he classifies the phenomena of the outer word by their analogies with subjective phenomena; his measure of distance is his own pace, his measure of time his own sleep, for he says, "It is a thousand paces to the great rock," or, "It is a hundred sleeps to the great feast." Noises are voices, powers are hands, movements are made afoot. By subjective examination discovering in himself will and design, and by inductive reason discovering will and design in his fellow men and in animals, he extends the induction to all the cosmos, and there discovers in all things will and design. All phenomena are supposed to be the acts of some one, and that some one having will and purpose. In mythologic philosophy the phenomena of the outer physical world are supposed to be the acts of living, willing, designing personages. The simple are compared with and explained by the complex. In scientific philosophy, phenomena are supposed to be children of antecedent phenomena, and so far as science goes with its explanation they are thus interpreted. Man with the subjective phenomena gathered about him is studied from an objective point of view, and the phenomena of subjective life are relegated to the categories established in the classification of the phenomena of the outer world; thus the complex is studied by resolving it into its simple constituents.

There is an unknown known, and there is a known unknown. The unknown known is the philosophy of savagery; the known unknown is the philosophy of civilization. In those stages of culture that we call savagery and barbarism, all things are known—supposed to be known; but when at last something is known, understood, explained, then to those who have that knowledge in full comprehension all other things become unknown. Then is ushered in the era of investigation and discovery; then science is born; then is the beginning of civilization. The philosophy of savagery is complete; the philosophy of civilization fragmentary. Ye men of science, ye wise fools, ye have discovered the law

of gravity, but ye cannot tell what gravity is. But savagery has a cause and a method for all things; nothing is left unexplained.

In the lower stages of savagery the cosmos is bounded by the great plain of land and sea on which we tread, and the firmament, the azure surface above, set with brilliants; and beyond is an abyss of—nothing. Within these bounds all things are known, all things are explained; there are no mysteries but the whims of the gods. But when the plain on which we tread becomes a portion of the surface of a great globe, and the domed firmament becomes the heavens, stretching beyond Alcyone and Sirius, with this enlargement of the realm of philosophy the verity of philosophy is questioned. The savage is a positive man; the scientist is a doubting man.

The opinions of a savage people are childish. Society grows! Some say society develops; others that society evolves; but, somehow, I like to say it grows. The history of the discovery of growth is a large part of the history of human culture. That individuals grow, that the child grows to be a man, the colt a horse, the scion a tree, is easily recognized, though with unassisted eye the processes of growth are not discovered. But that races grow—races of men, races of animals, races of plants, races or groups of worlds—is a very late discovery, and yet all of us do not grasp so great a thought. Consider that stage of culture where the growth of individuals is not fully recognized. That stage is savagery. To-day the native races of North America are agitated by discussions over that great philosopic question, "Do the trees grow or were they created?" That the grass grows they admit, but the orthodox philosophers stoutly assert that the forest pines and the great *sequoias* were created as they are.

Thus in savagery the philosophers dispute over the immediate creation or development of individuals—in civilization over the immediate creation or development of races. I know of no single fact that better illustrates the wide difference between these two stages of culture. But let us look for other terms of comparison. The scalping scene is no more the true picture of savagery than the bayonet charge of civilization. Savagery is sylvan life. Contrast *Ka-ni-ga* with New York. *Ka-ni-ga* is an Indian village in the Rocky Mountains. New York is, well—New York. The home in the forest is a shelter of boughs; the home in New York is a palace of granite. The dwellers in *Ka-ni-ga* are clothed in the skins of animals, rudely tanned, rudely wrought, and colored with daubs of clay. For the garments of New York, flocks are tended, fields are cultivated, ships sail on the sea, and men dig in the mountains for dye-stuffs stored in the rocks. The industries of *Ka-ni-ga* employ stone knives, bone awls, and human muscle; the industries of New York employ the tools of the trades, the machinery of the manufactories, and the power of the sun—for water-power is but sunshine, and the coal mine is but a pot of pickeled sunbeams.

Even the nursery rhymes are in contrast; the prattler in New York says:

> Daffy down dilly
> Has come up to town,
> With a green petticoat
> And a blue gown;

but in savagery the outer and nether garments are not yet differentiated; and more: blue and green are not differentiated, for the Indian has but one name for the two; the green grass and the blue heavens are of the same hue in the Indian tongue. But the nursery tales of *Ka-ni-ga* are of the animals, for the savages associate with the animals on terms of recognized equality; and this is what the prattler in *Ka-ni-ga* says:

> The poor little bee
> That lives in the tree,
> The poor little bee
> That lives in the tree,
> Has only one arrow
> In his quiver.

The arts and industries of savagery and civilization are not in greater contrast than their philosophy. To fully present to you the condition of savagery, as illustrated in their philosophy, three obstacles appear. After all the years I have spent among the Indians in their mountain villages, I am not certain that I have sufficiently divorced myself from the thoughts and ways of civilization to properly appreciate their childish beliefs. The second obstacle subsists in your own knowledge of the methods and powers of nature, and the ways of civilized society; and when I attempt to tell you what an Indian thinks, I fear you will never fully forget what you know, and thus you will be led to give too deep a meaning to a savage explanation; or, on the other hand, contrasting an Indian concept with your own, the manifest absurdity will sound to you as an idle tale too simple to deserve mention, or too false to deserve credence. The third difficulty lies in the attempt to put savage thoughts into civilized language; our words are so full of meaning, carry with them so many great thoughts and collateral ideas.

Some examples of the philosophic methods belonging to widely separated grades of culture may serve to make the previous statements clearer.

Wind.—The *Ute* philosopher discerns that men and animals breathe. He recognizes vaguely the phenomena of the wind, and discovers its resemblance to breath, and explains the winds by relegating them to the class of breathings. He declares that there is a monster beast in the north that breathes the winter winds, and another in the south, and another in the east, and another in the west. The facts relating to winds are but partially discerned; the philosopher has not yet discovered that there is an earth-surrounding atmosphere. He fails in making the proper discriminations. His relegation of the winds to the class of

breathings is analogic, but not homologic. The basis of his philosophy is personality, and hence he has four wind-gods.

The philosopher of the ancient Northland discovered that he could cool his brow with a fan, or kindle a flame, or sweep away the dust with the wafted air. The winds also cooled his brow, the winds also swept away the dust and kindled the fire into a great conflagration, and when the wind blew he said, "Somebody is fanning the waters of the fiord," or "Somebody is fanning the evergreen forests," and he relegated the winds to the class of fannings, and he said, "The god Hræsvelger, clothed with eagle-plumes, is spreading his wings for flight, and the winds rise from under them."

The early Greek philosopher discovered that air may be imprisoned in vessels or move in the ventilation of caves, and he recognized wind as something more than breath, something more than fanning, something that can be gathered up and scattered abroad, and so when the winds blew he said, "The sacks have been untied," or "The caves have been opened."

The philosopher of civilization has discovered that breath, the fan-wafted breeze, the air confined in vessels, the air moving in ventilation, that these are all parts of the great body of air which surrounds the earth, all in motion, swung by the revolving earth, heated at the tropics, cooled at the poles, and thus turned into counter-currents and again deflected by a thousand geographic features, so that the winds sweep down valleys, eddy among mountain crags, or waft the spray from the crested billows of the sea, all in obedience to cosmic laws. The facts discerned are many, the discriminations made are nice, and the classifications based on true homologies, and we have the science of meteorology, which exhibits an orderly succession of events even in the fickle winds.

Sun and Moon.—The *Ute* philosopher declares the sun to be a living personage, and explains his passage across the heavens along an appointed way by giving an account of a fierce personal conflict between *Tä-vi*, the sun-god, and *Ta-wäts*, one of the supreme gods of his mythology.

In that long ago, the time to which all mythology refers, the sun roamed the earth at will. When he came too near with his fierce heat the people were scorched, and when he hid away in his cave for a long time, too idle to come forth, the night was long and the earth cold. Once upon a time *Ta-wäts*, the hare-god, was sitting with his family by the camp-fire in the solemn woods, anxiously waiting for the return of *Tä-vi*, the wayward sun-god. Wearied with long watching, the hare-god fell asleep, and the sun-god came so near that he scorched the naked shoulder of *Ta-wäts*. Foreseeing the vengeance which would be thus provoked, he fled back to his cave beneath the earth. *Ta-wäts* awoke in great anger, and speedily determined to go and fight the sun-god. After a long journey of many adventures the hare-god came to the brink

of the earth, and there watched long and patiently, till at last the sun-god coming out he shot an arrow at his face, but the fierce heat consumed the arrow ere it had finished its intended course; then another arrow was sped, but that was also consumed; and another, and still another, till only one remained in his quiver, but this was the magical arrow that had never failed its mark. *Ta-wăts*, holding it in his hand, lifted the barb to his eye and baptized it in a divine tear; then the arrow was sped and struck the sun-god full in the face, and the sun was shivered into a thousand fragments, which fell to the earth, causing a general conflagration. Then *Ta-wăts*, the hare-god, fled before the destruction he had wrought, and as he fled the burning earth consumed his feet, consumed his legs, consumed his body, consumed his hands and his arms—all were consumed but the head alone, which bowled across valleys and over mountains, fleeing destruction from the burning earth until at last, swollen with heat, the eyes of the god burst and the tears gushed forth in a flood which spread over the earth and extinguished the fire. The sun-god was now conquered, and he appeared before a council of the gods to await sentence. In that long council were established the days and the nights, the seasons and the years, with the length thereof, and the sun was condemned to travel across the firmament by the same trail day after day till the end of time.

In this same philosophy we learn that in that ancient time a council of the gods was held to consider the propriety of making a moon, and at last the task was given to Whippoorwill, a god of the night, and a frog yielded himself a willing sacrifice for this purpose, and the Whippoorwill, by incantations, and other magical means, transformed the frog into the new moon. The truth of this origin of the moon is made evident to our very senses; for do we not see the frog riding the moon at night, and the moon is cold, because the frog from which it was made was cold?

The philosopher of *Oraibi* tells us that when the people ascended by means of the magical tree which constituted the ladder from the lower world to this, they found the firmament, the ceiling of this world, low down upon the earth—the floor of this world. *Mateito*, one of their gods, raised the firmament on his shoulders to where it is now seen. Still the world was dark, as there was no sun, no moon, and no stars. So the people murmured because of the darkness and the cold. *Mateito* said, "Bring me seven maidens," and they brought him seven maidens; and he said, "Bring me seven baskets of cotton-bolls," and they brought him seven baskets of cotton-bolls; and he taught the seven maidens to weave a magical fabric from the cotton, and when they had finished it he held it aloft, and the breeze carried it away toward the firmament, and in the twinkling of an eye it was transformed into a beautiful full-orbed moon, and the same breeze caught the remnants of flocculent cotton which the maidens had scattered during their work,

and carried them aloft, and they were transformed into bright stars. But still it was cold and the people murmured again, and *Mateito* said, "Bring me seven buffalo robes," and they brought him seven buffalo robes, and from the densely matted hair of the robes he wove another wonderful fabric, which the storm carried away into the sky, and it was transformed into the full-orbed sun. Then *Mateito* appointed times and seasons and ways for the heavenly bodies, and the gods of the firmament have obeyed the injunctions of *Mateito* from the day of their creation to the present.

The Norse philosopher tells us that Night and Day, each, has a horse and a car, and they drive successively one after the other around the world in twenty-four hours. Night rides first with her steed named Dew-hair, and every morning as he ends his course he bedews the earth with foam from his bit. The steed driven by Day is Shining-hair. All the sky and earth glisten with the light of his mane. Jarnved, the great iron-wood forest lying to the east of Midgard, is the abode of a race of witches. One monster witch is the mother of many sons in the form of wolves, two of which are Skol and Hate. Skol is the wolf that would devour the maiden Sun, and she daily flies from the maw of the terrible beast, and the moon-man flies from the wolf Hate.

The philosopher of Samos tells us that the earth is surrounded by hollow crystalline spheres set one within another, and all revolving at different rates from east to west about the earth, and that the sun is set in one of these spheres and the moon in another.

The philosopher of civilization tells us that the sun is an incandescent globe, one of the millions afloat in space. About this globe the planets revolve, and the sun and planets and moons were formed from nebulous matter by the gradual segregation of their particles controlled by the laws of gravity, motion, and affinity.

The sun, traveling by an appointed way across the heavens with the never-ending succession of day and night, and the ever-recurring train of seasons, is one of the subjects of every philosophy. Among all peoples, in all times, there is an explanation of these phenomena, but in the lowest stage, way down in savagery, how few the facts discerned, how vague the discriminations made, how superficial the resemblances by which the phenomena are classified! In this stage of culture, all the daily and monthly and yearly phenomena which come as the direct result of the movements of the heavenly bodies are interpreted as the doings of some one—some god acts. In civilization the philosopher presents us the science of astronomy with all its accumulated facts of magnitude, and weights, and orbits, and distances, and velocities—with all the nice discriminations of absolute, relative, and apparent motions; and all these facts he is endeavoring to classify in homologic categories, and the evolutions and revolutions of the heavenly bodies are explained as an orderly succession of events.

Rain.—The *Shoshoni* philosopher believes the domed firmament to be

ice, and surely it is the very color of ice, and he believes further that a monster serpent-god coils his huge back to the firmament and with his scales abrades its face and causes the ice-dust to fall upon the earth. In the winter-time it falls as snow, but in the summer-time it melts and falls as rain, and the Shoshoni philosopher actually sees the serpent of the storm in the rainbow of many colors.

The *Oraibi* philosopher who lives in a *pueblo* is acquainted with architecture, and so his world is seven-storied. There is a world below and five worlds above this one. *Muiñwa*, the rain-god, who lives in the world immediately above, dips his great brush, made of feathers of the birds of the heavens, into the lakes of the skies and sprinkles the earth with refreshing rain for the irrigation of the crops tilled by these curious Indians who live on the cliffs of Arizona. In winter, *Muiñwa* crushes the ice of the lakes of the heavens and scatters it over the earth, and we have a snow-fall.

The Hindoo philosopher says that the lightning-bearded Indra breaks the vessels that hold the waters of the skies with his thunder-bolts, and the rains descend to irrigate the earth.

The philosopher of civilization expounds to us the methods by which the waters are evaporated from the land and the surface of the sea, and carried away by the winds, and gathered into clouds to be discharged again upon the earth, keeping up forever that wonderful circulation of water from the heavens to the earth and from the earth to the heavens—that orderly succession of events in which the waters travel by river, by sea, and by cloud.

Rainbow.—In *Shoshoni*, the rainbow is a beautiful serpent that abrades the firmament of ice to give us snow and rain. In Norse, the rainbow is the bridge Bifrost spanning the space between heaven and earth. In the Iliad, the rainbow is the goddess Iris, the messenger of the King of Olympus. In Hebrew, the rainbow is the witness to a covenant. In science, the rainbow is an analysis of white light into its constituent colors by the refraction of raindrops.

Falling stars.—In *Ute*, falling stars are the excrements of dirty little star-gods. In science—well, I do not know what falling stars are in science. I think they are cinders from the furnace where the worlds are forged. You may call this mythologic or scientific, as you please.

Migration of birds.—The *Algonkian* philosopher explains the migration of birds by relating the myth of the combat between *Ka-bĭ-bo-no-ki* and *Shiñgapis*, the prototype or progenitor of the water-hen, one of their animal gods. A fierce battle raged between *Ka-bĭ-bo-no-ki* and *Shiñgapis*, but the latter could not be conquered. All the birds were driven from the land but *Shiñgapis;* and then was it established that whenever in the future Winter-maker should come with his cold winds, fierce snows, and frozen waters, all the birds should leave for the south except *Shiñgapis* and his friends. So the birds that spend their winters

north are called by the *Algonkian* philosophers "the friends of *Shiñga-pis*."

In contrast to this explanation of the flight of birds may be placed the explanation of the modern evolutionist, who says that the birds migrate in quest of abundance of food and a genial climate, guided by an instinct of migration, which is an accumulation of inherited memories.

Diversity of languages.—The *Kaibābit* philosopher accounts for the diversity of languages in this manner: *Sĭ-teom'-pa Ma-só-ĭts*, the grandmother goddess of the sea, brought up mankind from beneath the waves in a sack, which she delivered to the *Cĭn-aŭ-ăv* brothers, the great wolf-gods of his mythology, and told them to carry it from the shores of the sea to the Kaibab Plateau, and then to open it; but they were by no means to open the package ere their arrival, lest some great disaster should befall. The curiosity of the younger *Cĭn-aŭ-ăv* overcame him, and he untied the sack, and the people swarmed out; but the elder *Cĭn-aŭ-ăv*, the wiser god, ran back and closed the sack while yet not all the people had escaped, and they carried the sack, with its remaining contents, to the plateau, and there opened it. Those that remained in the sack found a beautiful land—a great plateau covered with mighty forests, through which elk, deer, and antelope roamed in abundance, and many mountain-sheep were found on the bordering crags; *pĭv*, the nuts of the edible pine, they found on the foot-hills, and *us*, the fruit of the yucca, in sunny glades; and *nānt*, the meschal crowns, for their feasts; and *teu-ar*, the cactus-apple, from which to make their wine; reeds grew about the lakes for their arrow-shafts; the rocks were full of flints for their barbs and knives, and away down in the cañon they found a pipe-stone quarry, and on the hills they found *ăr-a-ăm-pĭv*, their tobacco. O, it was a beautiful land that was given to these, the favorites of the gods! The decendents of these people are the present *Kaibābits* of northern Arizona. Those who escaped by the way, through the wicked curiosity of the younger *Cĭn-aŭ-ăv*, scattered over the country and became *Navajos*, *Mokis*, *Sioux*, *Comanches*, Spaniards, Americans—poor, sorry fragments of people without the original language of the gods, and only able to talk in imperfect jargons.

The Hebrew philosopher tells us that on the plains of Shinar the people of the world were gathered to build a city and erect a tower, the summit of which should reach above the waves of any flood Jehovah might send. But their tongues were confused as a punishment for their impiety.

The philosopher of science tells us that mankind was widely scattered over the earth anterior to the development of articulate speech, that the languages of which we are cognizant sprang from innumerable centers as each little tribe developed its own language, and that in the study of any language an orderly succession of events may be discovered in its evolution from a few simple holophrastic locutions to a complex language with a multiplicity of words and an elaborate grammatic structure, by the differentiation of the parts of speech and the integration of the sentence.

A cough.—A man coughs. In explanation the *Ute* philosopher would tell us that an *u-nú-pits*—a pygmy spirit of evil—had entered the poor man's stomach, and he would charge the invalid with having whistled at night; for in their philosophy it is taught that if a man whistles at night, when the pygmy spirits are abroad, one is sure to go through the open door into the stomach, and the evidence of this disaster is found in the cough which the *u-nú-pits* causes. Then the evil spirit must be driven out, and the medicine-man stretches his patient on the ground and scarifies him with the claws of eagles from head to heel, and while performing the scarification a group of men and women stand about, forming a chorus, and medicine-man and chorus perform a fugue in gloomy ululation, for these wicked spirits will depart only by incantations and scarifications.

In our folk-lore philosophy a cough is caused by a "cold," whatever that may be—a vague entity—that must be treated first according to the maxim "Feed a cold and starve a fever," and the "cold" is driven away by potations of bitter teas.

In our medical philosophy a cough may be the result of a clogging of the pores of the skin, and is relieved by clearing those flues that carry away the waste products of vital combustion.

These illustrations are perhaps sufficient to exhibit the principal characteristics of the two methods of philosophy, and, though they cover but narrow fields, it should be remembered that every philosophy deals with the whole cosmos. An explanation of all things is sought—not alone the great movements of the heavens, or the phenomena that startle even the unthinking, but every particular which is observed. Abstractly, the plane of demarkation between the two methods of philosophy can be sharply drawn, but practically we find them strangely mixed; mythologic methods prevail in savagery and barbarism, and scientfic methods prevail in civilization. Mythologic philosophies antedate scientific philosophies. The thaumaturgic phases of mythology are the embryonic stages of philosophy, science being the fully developed form. Without mythology there could be no science, as without childhood there could be no manhood, or without embryonic conditions there could be no ultimate forms.

MYTHOLOGIC PHILOSOPHY HAS FOUR STAGES.

Mythologic philosophy is the subject with which we deal. Its method, as stated in general terms, is this: All phenomena of the outer objective world are interpreted by comparison with those of the inner subjective world Whatever happens, some one does it; that some one has a will and works as he wills. The basis of the philosophy is personality. The persons who do the things which we observe in the phenomena of the universe are the gods of mythology—*the cosmos is a pantheon.* Under

this system, whatever may be the phenomenon observed, the philosopher asks, "Who does it?" and "Why?" and the answer comes, "A god with his design." The winds blow, and the interrogatory is answered, "Æolus frees them from the cave to speed the ship of a friend, or destroy the vessel of a foe." The actors in mythologic philosophy are gods.

In the character of these gods four stages of philosophy may be discovered. In the lowest and earliest stage everything has life; everything is endowed with personality, will, and design; animals are endowed with all the wonderful attributes of mankind; all inanimate objects are believed to be animate; trees think and speak; stones have loves and hates; hills and mountains, springs and rivers, and all the bright stars, have life—everything discovered objectively by the senses is looked upon subjectively by the philosopher and endowed with all the attributes supposed to be inherent in himself. In this stage of philosophy everything is a god. Let us call it *hecastotheism*.

In the second stage men no longer attribute life indiscriminately to inanimate things; but the same powers and attributes recognized by subjective vision in man are attributed to the animals by which he is surrounded. No line of demarkation is drawn between man and beast; all are great beings endowed with wonderful attributes. Let us call this stage *zoötheism*, when men worship beasts. All the phenomena of nature are the doings of these animal gods; all the facts of nature, all the phenomena of the known universe, all the institutions of humanity known to the philosophers of this stage, are accounted for in the mythologic history of these zoömorphic gods.

In the third stage a wide gulf is placed between man and the lower animals. The animal gods are dethroned, and the powers and phenomena of nature are personified and deified. Let us call this stage *physitheism*. The gods are strictly anthropomorphic, having the form as well as the mental, moral, and social attributes of men. Thus we have a god of the sun, a god of the moon, a god of the air, a god of dawn, and a deity of the night.

In the fourth stage, mental, moral, and social characteristics are personified and deified. Thus we have a god of war, a god of love, a god of revelry, a god of plenty, and like personages who preside over the institutions and occupations of mankind. Let us call this *psychotheism*. With the mental, moral, and social characteristics in these gods are associated the powers of nature; and they differ from nature-gods chiefly in that they have more distinct psychic characteristics.

Psychotheism, by the processes of mental integration, developes in one direction into monotheism, and in the other into pantheism. When the powers of nature are held predominant in the minds of the philosophers through whose cogitations this evolution of theism is carried on, pantheism, as the highest form of psychotheism, is the final result; but when the moral qualities are held in highest regard in the minds of the men in whom this process of evolution is carried on, *monotheism*, or a god

whose essential characteristics are moral qualities, is the final product. The monotheistic god is not nature, but presides over and operates through nature. Psychotheism has long been recognized. All of the earlier literature of mankind treats largely of these gods, for it is an interesting fact that in the history of any civilized people, the evolution of psychotheism is approximately synchronous with the invention of an alphabet. In the earliest writings of the Egyptians, the Hindoos, and the Greeks, this stage is discovered, and Osiris, Indra, and Zeus are characteristic representatives. As psychotheism and written language appear together in the evolution of culture, this stage of theism is consciously or unconsciously a part of the theme of all written history.

The paleontologist, in studying the rocks of the hill and the cliffs of the mountain, discovers, in inanimate stones, the life-forms of the ancient earth. The geologist, in the study of the structure of valleys and mountains, discovers groups of facts that lead him to a knowledge of more ancient mountains and valleys and seas, of geographic features long ago buried, and followed by a new land with new mountains and valleys, and new seas. The philologist, in studying the earliest writings of a people, not only discovers the thoughts purposely recorded in those writings, but is able to go back in the history of the people many generations, and discover with even greater certainty the thoughts of the more ancient people who made the words. Thus the writings of the Greeks, the Hindoos, and the Egyptians, that give an account of their psychic gods, also contain a description of an earlier theism unconsciously recorded by the writers themselves. Psychotheism prevailed when the sentences were coined, physitheism when the words were coined. So the philologist discovers physitheism in all ancient literature. But the verity of that stage of philosophy does not rest alone upon the evidence derived from the study of fossil philosophies through the science of philology. In the folk-lore of every civilized people having a psychotheistic philosophy, an earlier philosophy with nature-gods is discovered.

The different stages of philosophy which I have attempted to characterize have never been found in purity. We always observe different methods of explanation existing side by side, and the type of a philosophy is determined by the prevailing characteristics of its explanation of phenomena. Fragments of the earlier are always found side by side with the greater body of the later philosophy. Man has never clothed himself in new garments of wisdom, but has ever been patching the old, and the old and the new are blended in the same pattern, and thus we have atavism in philosophy. So in the study of any philosophy which has reached the psychotheistic age, patches of the earlier philosophy are always seen. Ancient nature-gods are found to be living and associating with the supreme psychic deities. Thus in anthropologic science there are three ways by which to go back in the history of any civilized people and learn of its barbaric physitheism. But of the verity of this stage we have further evidence. When Christianity was carried north

from Central Europe, the champions of the new philosophy, and its consequent religion, discovered, among those who dwelt by the glaciers of the north, a barbaric philosophy which they have preserved to history in the Eddas and Sagas, and Norse literature is full of a philosophy in a transition state, from physitheism to psychotheism; and, mark! the people discovered in this transition state were inventing an alphabet—they were carving Runes. Then a pure physitheism was discovered in the Aztec barbarism of Mexico; and elsewhere on the globe many people were found in that stage of culture to which this philosophy properly belongs. Thus the existence of physitheism as a stage of philosophy is abundantly attested. Comparative mythologists are agreed in recognizing these two stages. They might not agree to throw all of the higher and later philosophies into one group, as I have done, but all recognize the plane of demarkation between the higher and the lower groups as I have drawn it. Scholars, too, have come essentially to an agreement that physitheism is earlier and older than psychotheism. Perhaps there may be left a "doubting Thomas" who believes that the highest stage of psychotheism—that is, monotheism—was the original basis for the philosophy of the world, and that all other forms are degeneracies from that primitive and perfect state. If there be such a man left, to him what I have to say about philosophy is blasphemy.

Again, all students of comparative philosophy, or comparative mythology, or comparative religion, as you may please to approach this subject from different points of view, recognize that there is something else; that there are philosophies, or mythologies, or religions, not included in the two great groups. All that something else has been vaguely called *fetichism*. I have divided it into two parts, *hecastotheism* and *zoötheism*. The verity of zoötheism as a stage of philosophy rests on abundant evidence. In psychotheism it appears as *devilism* in obedience to a well-known law of comparative theology, viz, that the gods of a lower and superseded stage of culture oftentimes become the devils of a higher stage. So in the very highest stages of psychotheism we find beast-devils. In Norse mythology, we have Fenris the wolf, and Jormungandur the serpent. Dragons appear in Greek mythology, the bull is an Egyptian god, a serpent is found in the Zendavesta; and was there not a scaly fellow in the garden of Eden? So common are these beast-demons in the higher mythologies that they are used in every literature as rhetorical figures. So we find, as a figure of speech, the great red dragon with seven heads and ten horns, with tail that with one brush sweeps away a third of the stars of heaven. And wherever we find nature-worship we find it accompanied with beast-worship. In the study of higher philosophies, having learned that lower philosophies often exist side by side with them, we might legitimately conclude that a philosophy based upon animal gods had existed previous to the development of physitheism; and philologic research leads to the same conclusion. But we are not left to base this conclusion upon an

induction only, for in the examination af savage philosophies we actually discover zoötheism in all its proportions. Many of the Indians of North America, and many of South America, and many of the tribes of Africa, are found to be zoötheists. Their supreme gods are animals—tigers, bears, wolves, serpents, birds. Having discovered this, with a vast accumulation of evidence, we are enabled to carry philosophy back one stage beyond physitheism, and we can confidently assert that all the philosophies of civilization have come up through these three stages.

And yet, there are fragments of philosophy discovered which are not zoötheistic, physitheistic, nor psychotheistic. What are they? We find running through all three stages of higher philosophy that phenomena are sometimes explained by regarding them as the acts of persons who do not belong to any of the classes of gods found in the higher stages. We find fragments of philosophy everywhere which seem to assume that all inanimate nature is animate; that mountains and hills, and rivers and springs, that trees and grasses, that stones, and all fragments of things are endowed with life and with will, and act for a purpose. These fragments of philosophy lead to the discovery of hecastotheism. Philology also leads us back to that state when the animate and the inanimate were confounded, for the holophrastic roots into which words are finally resolved show us that all inanimate things were represented in language as actors. Such is the evidence on which we predicate the existence of hecastotheism as a veritable stage of philosophy. Unlike the three higher stages, it has no people extant on the face of the globe, known to be in this stage of culture. The philosophies of many of the lowest tribes of mankind are yet unknown, and hecastotheism may be discovered; but at the present time we are not warranted in saying that any tribe entertains this philosophy as its highest wisdom.

OUTGROWTH FROM MYTHOLOGIC PHILOSOPHY.

The three stages of mythologic philosophy that are still extant in the world must be more thoroughly characterized, and the course of their evolution indicated. But in order to do this clearly, certain outgrowths from mythologic philosophy must be explained—certain theories and practices that necessarily result from this philosophy, and that are intricately woven into the institutions of mankind.

Ancientism.—The first I denominate ancientism. Yesterday was better than to-day. The ancients were wiser that we. This belief in a better day and a better people in the elder time is almost universal among mankind. A belief so widely spread, so profoundly entertained, must have for its origin some important facts in the constitution or history of mankind. Let us see what they are.

In the history of every individual the sports and joys of childhood are compared and contrasted with the toils and pains of old age. Greatly protracted life, in savagery and barbarism, is not a boon to be craved. In that stage of society where the days and the years go by with little or no provision for a time other than that which is passing, the old must go down to the grave through poverty and suffering. In that stage of culture to-morrow's bread is not certain, and to-day's bread is often scarce. In civilization plenty and poverty live side by side; the palace and the hovel are on the same landscape; the rich and poor elbow each other on the same street; but in savagery plenty and poverty come with recurring days to the same man, and the tribe is rich to-day and poor to-morrow, and the days of want come in every man's history; and when they come the old suffer most, and the burden of old age is oppressive. In youth activity is joy; in old age activity is pain. No wonder, then, that old age loves youth, or that to-day loves yesterday, for the instinct is born of the inherited experiences of mankind.

But there is yet another and more potent reason for ancientism. That tale is the most wonderful that has been most repeated, for the breath of speech is the fertilizer of story. Hence, the older the story the greater its thaumaturgics. Thus, yesterday is greater than to-day by natural processes of human exaggeration. Again, that is held to be most certain, and hence most sacred, which has been most often affirmed. A Brahman was carrying a goat to the altar. Three thieves would steal it. So they placed themselves at intervals along the way by which the pious Brahman would travel. When the venerable man came to the first thief he was accosted: "Brahman, why do you carry a dog?" Now, a dog is an unclean beast which no Brahman must touch. And the Brahman, after looking at his goat, said: "You do err; this is a goat." And when the old man reached the second thief, again he was accosted: "Brahman, why do you carry a dog?" So the Brahman put his goat on the ground, and after narrowly scrutinizing it, he said: "Surely this is a goat," and went on his way. When he came to the third thief he was once more accosted: "Brahman, why do you carry a dog?" Then the Brahman, having thrice heard that his goat was a dog, was convinced, and throwing it down, he fled to the temple for ablution, and the thieves had a feast.

The child learns not for himself, but is taught, and accepts as true that which is told, and a propensity to believe the affirmed is implanted in his mind. In every society some are wise and some are foolish, and the wise are revered, and their affirmations are accepted. Thus, the few lead the multitude in knowledge, and the propensity to believe the affirmed started in childhood is increased in manhood in the great average of persons constituting society, and these propensities are inherited from generation to generation, until we have a cumulation of effects.

The propagation of opinions by affirmation, the cultivation of the propensity to believe that which has been affirmed many times, let us call

affirmatization. If the world's opinions were governed only by the principles of mythologic philosophy, affirmatization would become so powerful that nothing would be believed but the anciently affirmed. Men would come to no new knowledge. Society would stand still listening to the wisdom of the fathers. But the power of affirmatization is steadily undermined by science.

And, still again, the institutions of society conform to its philosophy. The explanations of things always includes the origin of human institutions. So the welfare of society is based on philosophy, and the venerable sayings which constitute philosophy are thus held as sacred. So ancientism is developed from accumulated life-experiences; by the growth of story in repeated narration; by the steadily increasing power of affirmatization, and by respect for the authority upon which the institutions of society are based; all accumulating as they come down the generations. That we do thus inherit effects we know, for has it not been affirmed in the Book that "the fathers have eaten grapes, and the children's teeth are set on edge"? As men come to believe that the "long ago" was better than the "now," and the dead were better than the living, then philosophy must necessarily include a theory of degeneracy, which is a part of ancientism.

Theistic Society.—Again, the actors in mythologic philosophy are personages, and we always find them organized in societies. The social organization of mythology is always found to be essentially identical with the social organization of the people who entertain the philosophy. The gods are husbands and wives, and parents and children, and the gods have an organized government. This gives us theistic society, and we cannot properly characterize a theism without taking its mythic society into consideration.

Spiritism.—In the earliest stages of society of which we have practical knowledge by acquaintance with the people themselves, a belief in the existence of spirits prevails—a shade, an immaterial existence, which is the duplicate of the material personage. The genesis of this belief is complex. The workings of the human mind during periods of unconsciousness lead to opinions that are enforced by many physical phenomena.

First, we have the activities of the mind during sleep, when the man seems to go out from himself, to converse with his friends, to witness strange scenes, and to have many wonderful experiences. Thus the man seems to have lived an eventful life, when his body was, in fact, quiescent and unconscious. Memories of scenes and activities in former days, and the inherited memories of scenes witnessed and actions performed by ancestors, are blended in strange confusion by broken and inverted sequences. Now and then the dream-scenes are enacted in real life, and the infrequent coincidence or apparent verification makes deep impression on the mind, while unfulfilled dreams are forgotten. Thus the dreams of sleepers are attributed to their immaterial duplicates—

their spirits. In many diseases, also, the mind seems to wander, to see sights and to hear sounds, and to have many wonderful experiences, while the body itself is apparently unconscious. Sometimes, on restored health, the person may recall these wonderful experiences, and during their occurrence the subject talks to unseen persons, and seems to have replies, and to act, to those who witness, in such a manner that a second self—a spirit independent of the body—is suggested. When disease amounts to long-continued insanity all of these effects are greatly exaggerated, and make a deep impression upon all who witness the phenomena. Thus the hallucinations of fever-racked brains, and mad minds, are attributed to spirits.

The same conditions of apparent severance of mind and body witnessed in dreams and hallucinations are often produced artificially in the practice of *ecstasism*. In the vicissitudes of savage life, while little or no provision is made for the future, there are times when the savage resorts to almost anything at hand as a means of subsistence, and thus all plants and all parts of plants, seed, fruit, flowers, leaves, bark, roots—anything in times of extreme want—may be used as food. But experience soon teaches the various effects upon the human system which are produced by the several vegetable substances with which he meets, and thus the effect of narcotics is early discovered, and the savage in the practice of his religion oftentimes resorts to these native drugs for the purpose of producing an ecstatic state under which divination may be performed. The practice of ecstasism is universal in the lower stages of culture. In times of great anxiety, every savage and barbarian seeks to know of the future. Through all the earlier generations of mankind, ecstasism has been practiced, and civilized man has thus an inherited appetite for narcotics, to which the enormous propensity to drunkenness existing in all nations bears witness. When the great actor in his personation of Rip Van Winkle holds his goblet aloft and says, "Here's to your health and to your family's, and may they live long and prosper," he connects the act of drinking with a prayer, and unconsciously demonstrates the origin of the use of stimulants. It may be that when the jolly companion has become a loathsome sot, and his mind is ablaze with the fire of drink, and he sees uncouth beasts in horrid presence, that inherited memories haunt him with visions of the beast-gods worshipped by his ancestors at the very time when the appetite for stimulants was created.

But ecstasism is produced in other ways, and for this purpose the savage and barbarian often resorts to fasting and bodily torture. In many ways he produces the wonderful state, and the visions of ecstasy are interpreted as the evidence of spirits.

Many physical phenomena serve to confirm this opinion. It is very late in philosophy when shadows are referred to the interception of the rays of the sun. In savagery and barbarism, shadows are supposed to be emanations from or duplicates of the bodies causing the shadows. And what savage understands the reflection of the rays of the sun by

which images are produced? They also are supposed to be emanations or duplications of the object reflected. No savage or barbarian could understand that the waves of the air are turned back, and sound is duplicated in an echo. He knows not that there is an atmosphere, and to him the echo is the voice of an unseen personage—a spirit. There is no theory more profoundly implanted in early mankind than that of spiritism.

Thaumaturgics.—The gods of mythologic philosophies are created to account for the wonders of nature. Necessarily they are a wonder-working folk, and, having been endowed with these magical powers in all the histories given in mythic tales of their doings on the earth, we find them performing most wonderful feats. They can transform themselves; they can disappear and reappear; all their senses are magical; some are endowed with a multiplicity of eyes, others have a multiplicity of ears; in Norse mythology the watchman on the rainbow bridge could hear the grass grow, and wool on the backs of sheep; arms can stretch out to grasp the distance, tails can coil about mountains, and all powers become magical. But the most wonderful power with which the gods are endowed is the power of will, for we find that they can think their arrows to the hearts of their enemies; mountains are overthrown by thought, and thoughts are projected into other minds. Such are the thaumaturgics of mythologic philosophy.

Mythic tales.—Early man having created through the development of his philosophy a host of personages, these gods must have a history. A part of that history, and the most important part to us as students of philosophy, is created in the very act of creating the gods themselves. I mean that portion of their history which relates to the operations of nature, for the gods were created to account for those things. But to this is added much else of adventure. The gods love as men love, and go in quest of mates. The gods hate as men hate, and fight in single combat or engage in mythic battles; and the history of these adventures impelled by love and hate, and all other passions and purposes with which men are endowed, all woven into a complex tissue with their doings in carrying out the operations of nature, constitutes the web and woof of mythology.

Religion.—Again, as human welfare is deeply involved in the operations of nature, man's chief interest is in the gods. In this interest religion originates. Man, impelled by his own volition, guided by his own purposes, aspires to a greater happiness, and endeavor follows endeavor, but at every step his progress is impeded; his own powers fail before the greater powers of nature; his powers are pygmies, nature's powers are giants, and to him these giants are gods with wills and purposes of their own, and he sees that man in his weakness can succeed only by allying himself with the gods. Hence, impelled by this philosophy, man must have communion with the gods, and in this communion he must influence them to work for himself. Hence, religion, which has

to do with the relations which exist between the gods and man, is the legitimate offspring of mythologic philosophy.

Thus we see that out of mythologic philosophy, as branches of the great tree itself, there grow ancientism, theistic society, spiritism, thaumaturgics, mythic tales, and religion.

THE COURSE OF EVOLUTION IN MYTHOLOGIC PHILOSOPHY.

I shall now give a summary characterization of zoötheism, then call attention to some of the relics of hecastotheism found therein, and proceed with a brief statement of the higher stages of theism. The apparent and easily accessible is studied first. In botany, the trees and the conspicuous flowering plants of garden, field, and plain were first known, and then all other plants were vaguely grouped as weeds; but, since the most conspicuous phenogamous plants were first studied, what vast numbers of new orders, new genera, and new species have been discovered, in the progress of research, to the lowest cryptogams!

In the study of ethnology we first recognized the more civilized races. The Aryan, Hamites, Shemites, and Chinese, and the rest were the weeds of humanity—the barbarian and savage, sometimes called Turanians. But, when we come carefully to study these lower people, what numbers of races are discovered! In North America alone we have more than seventy-five—seventy-five stocks of people speaking seventy-five stocks of language, and some single stocks embracing many distinct languages and dialects. The languages of the Algonkian family are as diverse as the Indo-European tongues. So are the languages of the Dakotans, the Shoshonians, the Tinnéans, and others; so that in North America we have more than five hundred languages spoken to-day. Each linguistic stock is found to have a philosophy of its own, and each stock as many branches of philosophy as it has languages and dialects. North America presents a magnificent field for the study of savage and barbaric philosophies.

This vast region of thought has been explored only by a few adventurous travelers in the world of science. No thorough survey of any part has been made. Yet the general outlines of North American philosophy are known, but the exact positions, the details, are all yet to be filled in—as the geography of the general outline of North America is known by exploration, but the exact positions and details of topography are yet to be filled in as the result of careful survey. Myths of the Algonkian stock are found in many a volume of *Americana*, the best of which were recorded by the early missionaries who came from Europe, though we find some of them, mixed with turbid speculations, in the writings of Schoolcraft. Many of the myths of the Indians of the south, in that

region stretching back from the great Gulf, are known; some collected by travelers, others by educated Indians.

Many of the myths of the Iroquois are known. The best of these are in the writings of Morgan, America's greatest anthropologist. Missionaries, travelers, and linguists have given us a great store of the myths of the Dakotan stock. Many myths of the Tinnéan also have been collected. Petitot has recorded a number of those found at the north, and we have in manuscript some of the myths of a southern branch—the Navajos. Perhaps the myths of the Shoshonians have been collected more thoroughly than those of any other stock. These are yet unpublished, but the manuscripts are in the library of the Bureau of Ethnology. Powers has recorded many of the myths of various stocks in California, and the old Spanish writings give us a fair collection of the Nahuatlan myths of Mexico, and Rink has presented an interesting volume on the mythology of the Innuits; and, finally, fragments of mythology have been collected from nearly all the tribes of North America, and they are scattered through thousands of volumes, so that the literature is vast. The brief description which I shall give of zoötheism is founded on a study of the materials which I have thus indicated.

All these tribes are found in the higher stages of savagery, or the lower stages of barbarism, and their mythologies are found to be zoötheistic among the lowest, physitheistic among the highest, and a great number of tribes are found in a transition state; for zoötheism is found to be a characteristic of savagery, and physitheism of barbarism, using the terms as they have been defined by Morgan. The supreme gods of this stage are animals. The savage is intimately associated with animals. From them he obtains the larger part of his clothing, and much of his food, and he carefully studies their habits and finds many wonderful things. Their knowledge and skill and power appear to him to be superior to his own. He sees the mountain-sheep fleet among the crags, the eagle soaring in the heavens, the humming-bird poised over its blossom-cup of nectar, the serpents swift without legs, the salmon scaling the rapids, the spider weaving its gossamer web, the ant building a play-house mountain—in all animal nature he sees things too wonderful for him, and from admiration he grows to adoration, and the animals become his gods.

Ancientism plays an important part in this zoötheism. It is not the animals of to-day whom the Indians worship, but their progenitors—their prototypes. The wolf of to-day is a howling pest, but that wolf's ancestor—the first of the line—was a god. The individuals of every species are supposed to have descended from an ancient being—a progenitor of the race; and so they have a grizzly-bear god, an eagle-god, a rattlesnake-god, a trout-god, a spider-god—a god for every species and variety of animal.

By these animal gods all things were established. The heavenly bodies were created and their ways appointed, and when the powers and

phenomena of nature are personified the personages are beasts, and all human institutions also were established by the ancient animal-gods.

The ancient animals of any philosophy of this stage are found to constitute a clan or *gens*—a body of relatives, or *consanguinei*, with grandfathers, fathers, sons, and brothers. In *Ute* theism, the ancient *To-gó-äv*, the first rattlesnake is the grandfather, and all the animal-gods are assigned to their relationships. Grandfather *To-gó-äv*, the wise, was the chief of the council, but *Cïn-aŭ-äv*, the ancient wolf, was the chief of the clan.

There were many other clans and tribes of ancient gods with whom these supreme gods had dealings, of which hereafter; and, finally, each of these ancient gods became the progenitor of a new tribe, so that we have a tribe of bears, a tribe of eagles, a tribe of rattlesnakes, a tribe of spiders, and many other tribes, as we have tribes of Utes, tribes of Sioux, tribes of Navajos; and in that philosophy tribes of animals are considered to be coördinate with tribes of men. All of these gods have invisible duplicates—spirits—and they have often visited the earth. All of the wonderful things seen in nature are done by the animal-gods. That elder life was a magic life; but the descendants of the gods are degenerate. Now and then as a medicine-man by practicing sorcery can perform great feats, so now and then there is a medicine-bear, a medicine-wolf, or a medicine-snake that can work magic.

On winter nights the Indians gather about the camp-fire, and then the doings of the gods are recounted in many a mythic tale. I have heard the venerable and impassioned orator on the camp-meeting stand rehearse the story of the crucifixion, and have seen the thousands gathered there weep in contemplation of the story of divine suffering, and heard their shouts roll down the forest aisles as they gave vent to their joy at the contemplation of redemption. But the scene was not a whit more dramatic than another I have witnessed in an evergreen forest of the Rocky Mountain region, where a tribe was gathered under the great pines, and the temple of light from the blazing fire was walled by the darkness of midnight, and in the midst of the temple stood the wise old man, telling, in simple savage language, the story of *Ta-wäts*, when he conquered the sun and established the seasons and the days. In that pre-Columbian time, before the advent of white men, all the Indian tribes of North America gathered on winter nights by the shores of the seas where the tides beat in solemn rhythm, by the shores of the great lakes where the waves dashed against frozen beaches, and by the banks of the rivers flowing ever in solemn mystery—each in its own temple of illumined space—and listened to the story of its own supreme gods, the ancients of time.

Religion, in this stage of theism, is sorcery. Incantation, dancing, fasting, bodily torture, and ecstasism are practiced. Every tribe has its potion or vegetable drug, by which the ecstatic state is produced, and their venerable medicine-men see visions and dream dreams. No en-

terprise is undertaken without consulting the gods, and no evil impends but they seek to propitiate the gods. All daily life, to the minutest particular, is religious. This stage of religion is characterized by fetichism. Every Indian is provided with his charm or fetich, revealed to him in some awful hour of ecstasy produced by fasting, or feasting, or drunkenness, and that fetich he carries with him to bring good luck, in love or in combat, in the hunt or on the journey. He carries a fetich suspended to his neck, he ties a fetich to his bow, he buries a fetich under his tent, he places a fetich under his pillow of wild-cat skins, he prays to his fetich, he praises it, or chides it; if successful, his fetich receives glory; if he fail, his fetich is disgraced. These fetiches may be fragments of bone or shell, the tips of the tails of animals, the claws of birds or beasts, perhaps dried hearts of little warblers, shards of beetles, leaves powdered and held in bags, or crystals from the rocks—anything curious may become a fetich. Fetichism, then, is a religious means, not a philosophic or mythologic state. Such are the supreme gods of the savage, and such the institutions which belong to their theism. But they have many other inferior gods. Mountains, hills, valleys, and great rocks have their own special deities—invisible spirits—and lakes, rivers, and springs are the homes of spirits. But all these have animal forms when in proper *personæ*. Yet some of the medicine-spirits can transform themselves, and work magic as do medicine-men. The heavenly bodies are either created personages or ancient men or animals translated to the sky. And, last, we find that ancestors are worshipped as gods.

Among all the tribes of North America with which we are acquainted tutelarism prevails. Every tribe and every clan has its own protecting god, and every individual has his *my god*. It is a curious fact that every Indian seeks to conceal the knowledge of his *my god* from all other persons, for he fears that, if his enemy should know of his tutelar deity, he might by extraordinary magic succeed in estranging him, and be able to compass his destruction through his own god.

In this summary characterization of zoötheism, I have necessarily systematized my statements. This, of course, could not be done by the savage himself. He could give you its particulars, but could not group those particulars in any logical way. He does not recognize any system, but talks indiscriminately, now of one, now of another god, and with him the whole theory as a system is vague and shadowy, but its particulars are vividly before his mind, and the certainty with which he entertains his opinions leaves no room to doubt his sincerity.

But there is yet another phase of theism discovered. Sometimes a particular mountain, or hill, or some great rock, some waterfall, some lake, or some spring receives special worship, and is itself believed to be a deity. This seems to be a relic of hecastotheism. Fetichism, also, seems to have come from that lower grade, and all the minor deities, the spirits of mountains and hills and forest, seem to have been derived from that same stage, but with this development, that the things themselves are not worshipped, but their essential spirits.

From zoötheism, as described, to physitheism the way is long. Gradually, in the progress of philosophy, animal gods are dethroned and become inferior gods or are forgotten; and gradually the gods of the firmament —the sun, the moon, the stars—are advanced to supremacy; the clouds, the storms, the winds, day and night, dawn and gloaming, the sky, the earth, the sea, and all the various phases of nature perceived by the barbaric mind, are personified and deified and exalted to a supremacy coördinate with the firmament gods; and all the gods of the lower stage that remain—animals, demons, and all men—belong to inferior tribes. The gods of the sky—the shining ones, those that soar on bright wings, those that are clothed in gorgeous colors, those that came from we know not where, those that vanish to the unknown—are the supreme gods. We always find these gods organized in great tribes, with mighty chieftains who fight in great combats or lead their hosts in battle, and return with much booty. Such is the theism of ancient Mexico, such the theism of the Northland, and such the theism discovered among the ancient Aryans.

From this stage to psychotheism the way is long, for evolution is slow. Gradually men come to differentiate more carefully between good and evil, and the ethic character of their gods becomes the subject of consideration, and the good gods grow in virtue, and the bad gods grow in vice. Their identity with physical objects and phenomena is gradually lost. The different phases or conditions of the same object or phenomenon are severed, and each is personified. The bad gods are banished to underground homes, or live in concealment, from which they issue on their expeditions of evil. Still, all powers exist in these gods, and all things were established by them. With the growth of their moral qualities no physical powers are lost, and the spirts of the physical bodies and phenomena become demons, subordinate to the great gods who preside over nature and human institutions.

We find, also, that these superior gods are organized in societies. I have said the Norse mythology was in a transition state from physitheism to psychotheism. The Asas, or gods, lived in Asgard, a mythic communal village, with its Thing or Council, the very counterpart of the communal village of Iceland. Olympus was a Greek city.

Still further in the study of mythologic philosophy we see that more and more supremacy falls into the hands of the few, until monotheism is established on the plan of the empire. Then all of the inferior deities whose characters are pure become ministering angels, and the inferior deities whose characters are evil become devils, and the differentiation of good and evil is perfected in the gulf between heaven and hell. In all this time from zoötheism to monotheism, ancientism becomes more ancient, and the times and dynasties are multiplied. Spiritism is more clearly defined, and spirits become eternal; mythologic tales are codified, and sacred books are written; divination for the result of amorous intrigue has become the prophecy of immortality, and thaumaturgics is

formulated as the omnipresent, the omnipotent, the omniscient—the infinite.

Time has failed me to tell of the evolution of idolatry from fetichism, priestcraft from sorcery, and of their overthrow by the doctrines that were uttered by that voice on the Mount. Religion, that was fetichism and ecstasism and sorcery, is now the yearning for something better, something purer, and the means by which this highest state for humanity may be reached, the ideal worship of the highest monotheism, is "in spirit and in truth." The steps are long from *Oïn-aú-ïv*, the ancient of wolves, by Zeus, the ancient of skies, to Jehovah, the "Ancient of Days."

MYTHIC TALES.

In every Indian tribe there is a great body of story lore—tales purporting to be the sayings and doings, the history, of the gods. Every tribe has one or more persons skilled in the relation of these stories—preachers. The long winter evenings are set apart for this purpose. Then the men and women, the boys and girls, gather about the camp-fire to listen to the history of the ancients, to a chapter in the unwritten bible of savagery. Such a scene is of the deepest interest. A camp-fire of blazing pine or sage boughs illumines a group of dusky faces intent with expectation, and the old man begins his story, talking and acting; the elders receiving his words with reverence, while the younger persons are played upon by the actor until they shiver with fear or dance with delight. An Indian is a great actor. The conditions of Indian life train them in natural sign language. Among the two hundred and fifty or three hundred thousand Indians in the United States, there are scores of languages, so that often a language is spoken by only a few hundred or a few score of people; and as a means of communication between tribes speaking different languages, a sign language has grown up, so that an Indian is able to talk all over—with the features of his face, his hands and feet, the muscles of his body; and thus a skillful preacher talks and acts; and, inspired by a theme which treats of the gods, he sways his savage audience at will. And ever as he tells his story he points a moral—the mythology, theology, religion, history, and all human duties are taught. This preaching is one of the most important institutions of savagery. The whole body of myths current in a tribe is the sum total of their lore—their philosophy, their miraculous history, their authority for their governmental institutions, their social institutions, their habits and customs. It is their unwritten bible.

THE CĬN-AÚ-ÄV BROTHERS DISCUSS MATTERS OF IMPORTANCE TO THE PEOPLE.

Once upon a time the *Cĭn-aú-äv* brothers met to consult about the destiny of the *U-ĭn-ká-rĕts*. At this meeting the younger said: "Brother, how shall these people obtain their food? Let us devise some good plan for them. I was thinking about it all night, but could not see what would be best, and when the dawn came into the sky I went to a mountain and sat on its summit, and thought a long time; and now I can tell you a good plan by which they can live. Listen to your younger brother. Look at these pine trees; their nuts are sweet; and there is the *us*, very rich; and there is the apple of the cactus, full of juice; on the plain you see the sunflower, bearing many seeds—they will be good for the nation. Let them have all these things for their food, and when they have gathered a store they shall put them in the ground, or hide them in the rocks, and when they return they shall find abundance, and having taken of them as they may need, shall go on, and yet when they return a second time there shall still be plenty; and though they return many times, as long as they live the store shall never fail; and thus they will be supplied with abundance of food without toil." "Not so," said the elder brother, "for then will the people, idle and worthless, and having no labor to perform, engage in quarrels, and fighting will ensue, and they will destroy each other, and the people will be lost to the earth; they must work for all they receive." Then the younger brother answered not, but went away sorrowing.

The next day he met the elder brother and accosted him thus: "Brother, your words were wise; let the *U-ĭn-ká-rĕts* work for their food. But how shall they be furnished with honey-dew? I have thought all night about this, and when the dawn came into the sky I sat on the summit of the mountain and did think, and now I will tell you how to give them honey-dew: Let it fall like a great snow upon the rocks, and the women shall go early in the morning and gather all they may desire, and they shall be glad." "No," replied the elder brother, "it will not be good, my little brother, for them to have much and find it without toil; for they will deem it of no more value than dung, and what we give them for their pleasure will only be wasted. In the night it shall fall in small drops on the reeds, which they shall gather and beat with clubs, and then will it taste very sweet, and having but little they will prize it the more." And the younger brother went away sorrowing, but returned the next day and said: "My brother, your words are wise; let the women gather the honey-dew with much toil, by beating the reeds with flails. Brother, when a man or a woman, or a boy or a girl, or a little one dies, where shall he go? I have thought all night about this, and

when the dawn came into the sky I sat on the top of the mountain and did think. Let me tell you what to do: When a man dies, send him back when the morning returns, and then will all his friends rejoice." "Not so," said the elder; "the dead shall return no more." The little brother answered him not, but, bending his head in sorrow, went away.

One day the younger *Cĭn-aŭ-äv* was walking in the forest, and saw his brother's son at play, and taking an arrow from his quiver slew the boy, and when he returned he did not mention what he had done. The father supposed that his boy was lost, and wandered around in the woods for many days, and at last found the dead child, and mourned his loss for a long time.

One day the younger *Cĭn-aŭ-äv* said to the elder, "You made the law that the dead should never return. I am glad that you were the first to suffer." Then the elder knew that the younger had killed his child, and he was very angry and sought to destroy him, and as his wrath increased the earth rocked, subterraneous groanings were heard, darkness came on, fierce storms raged, lightning flashed, thunder reverberated through the heavens, and the younger brother fled in great terror to his father, *Ta-vwots'*, for protection.

ORIGIN OF THE ECHO.

I'-o-wi (the turtle dove) was gathering seeds in the valley, and her little babe slept. Wearied with carrying it on her back, she laid it under the *tĭ-hó-pĭ* (sage bush) in care of its sister, *O-hó-tcu* (the summer yellow bird). Engaged in her labors, the mother wandered away to a distance, when a *tsó-a-vwĭts* (a witch) came and said to the little girl, "Is that your brother?" and *O-hó-tcu* answered, "This is my sister," for she had heard that witches preferred to steal boys, and did not care for girls. Then the *tsó-a-vwĭts* was angry and chided her, saying that it was very naughty for girls to lie; and she put on a strange and horrid appearance, so that *O-hó-tcu* was stupefied with fright; then the *tsó-a-vwĭts* ran away with the boy, carrying him to her home on a distant mountain. Then she laid him down on the ground, and, taking hold of his right foot, stretched the baby's leg until it was as long as that of a man, and she did the same to the other leg; then his body was elongated; she stretched his arms, and, behold, the baby was as large as a man. And the *tsó-a-vwĭts* married him and had a husband, which she had long desired; but, though he had the body of a man, he had the heart of a babe, and knew no better than to marry a witch.

Now, when *I'-o-wi* returned and found not her babe under the *tĭ-hó-pĭ*, but learned from *O-hó-tcu* that it had been stolen by a *tsó-a-vwĭts*, she was very angry, and punished her daughter very severely. Then she went in search of the babe for a long time, mourning as she went, and

crying and still crying, refusing to be comforted, though all her friends joined her in the search, and promised to revenge her wrongs.

Chief among her friends was her brother, *Kwi'-na* (the eagle), who traveled far and wide over all the land, until one day he heard a strange noise, and coming near he saw the *tsó-a-vwits* and *U'-ja* (the sage cock), her husband, but he did not know that this large man was indeed the little boy who had been stolen. Yet he returned and related to *I'-o-wi* what he had seen, who said: "If that is indeed my boy, he will know my voice." So the mother came near to where the *tsó-a-vwits* and *U'-ja* were living, and climbed into a cedar tree, and mourned and cried continually. *Kwi'-na* placed himself near by on another tree to observe what effect the voice of the mother would have on *U'-ja*, the *tsó-a-vwits'* husband. When he heard the cry of his mother, *U'-ja* knew the voice, and said to the *tsó-a-vwits*, "I hear my mother, I hear my mother, I hear my mother," but she laughed at him, and persuaded him to hide.

Now, the *tsó-a-vwits* had taught *U'-ja* to hunt, and a short time before he had killed a mountain sheep, which was lying in camp. The witch emptied the contents of the stomach, and with her husband took refuge within; for she said to herself, "Surely, *I'-o-wi* will never look in the paunch of a mountain sheep for my husband." In this retreat they were safe for a long time, so that they who were searching were sorely puzzled at the strange disappearance. At last *Kwi'-na* said, "They are hid somewhere in the ground, maybe, or under the rocks; after a long time they will be very hungry and will search for food; I will put some in a tree so as to tempt them." So he killed a rabbit and put it on the top of a tall pine, from which he trimmed the branches and peeled the bark, so that it would be very difficult to climb; and he said, "When these hungry people come out they will try to climb that tree for food, and it will take much time, and while the *tsó-a-vwits* is thus engaged we will carry *U'-ja* away." So they watched some days, until the *tsó-a-vwits* was very hungry, and her baby-hearted husband cried for food; and she came out from their hiding place and sought for something to eat. The odor of the meat placed on the tree came to her nostrils, and she saw where it was and tried to climb up, but fell back many times; and while so doing *Kwi'-na*, who had been sitting on a rock near by and had seen from where she came, ran to the paunch which had been their house, and taking the man carried him away and laid him down under the very same *ti-hó-pi* from which he had been stolen; and behold! he was the same beautiful little babe that *I'-o-wi* had lost.

And *Kwi'-na* went off into the sky and brought back a storm, and caused the wind to blow, and the rain to beat upon the ground, so that his tracks were covered, and the *tsó-a-vwits* could not follow him; but she saw lying upon the ground near by some eagle feathers, and knew well who it was that had deprived her of her husband, and she said to herself, "Well, I know *Kwi'-na* is the brother of *I'-o-wi;* he is a

great warrior and a terrible man; I will go to *To-go'-a* (the rattlesnake), my grandfather, who will protect me and kill my enemies."

To-go'-a was enjoying his midday sleep on a rock, and as the *tsó-a-vwits* came near her grandfather awoke and called out to her, "Go back, go back; you are not wanted here; go back!" But she came on begging his protection; and while they were still parleying they heard *Kwi'-na* coming, and *To-go'-a* said, "Hide, hide!" But she knew not where to hide, and he opened his mouth and the *tsó-a-vwits* crawled into his stomach. This made *To-go'-a* very sick and he entreated her to crawl out, but she refused, for she was in great fear. Then he tried to throw her up, but could not, and he was sick nigh unto death. At last, in his terrible retchings, he crawled out of his own skin, and left the *tsó-a-vwits* in it, and she, imprisoned there, rolled about and hid in the rocks. When *Kwi'-na* came near he shouted, "Where are you, old *tsó-a-vwits?* where are you, old *tsó-a-vwits?*" She repeated his words in mockery.

Ever since that day witches have lived in snake skins, and hide among the rocks, and take great delight in repeating the words of passers by.

The white man, who has lost the history of these ancient people, calls these mocking cries of witches domiciliated in snake skins "echoes," but the Indians know the voices of the old hags.

This is the origin of the echo.

THE SO'-KŬS WAI'-ŬN-ĂTS.

Tŭm-pwĭ-nai'-ro-gwĭ-nŭmp, he who had a stone shirt, killed *Sĭ-kor'*, (the crane,) and stole his wife, and seeing that she had a child, and thinking it would be an incumbrance to them on their travels, he ordered her to kill it. But the mother, loving the babe, hid it under her dress, and carried it away to its grandmother. And Stone Shirt carried his captured bride to his own land.

In a few years the child grew to be a fine lad, under the care of his grandmother, and was her companion wherever she went.

One day they were digging flag roots, on the margin of the river, and putting them in a heap on the bank. When they had been at work a little while, the boy perceived that the roots came up with greater ease than was customary, and he asked the old woman the cause of this, but she did not know; and, as they continued their work, still the reeds came up with less effort, at which their wonder increased, until the grandmother said, "Surely, some strange thing is about to transpire." Then the boy went to the heap where they had been placing the roots, and found that some one had taken them away, and he ran back, exclaiming, "Grandmother, did you take the roots away?" And she answered, "No, my child; perhaps some ghost has taken them off; let us dig no more; come away."

But the boy was not satisfied, as he greatly desired to know what all this meant; so he searched about for a time, and at length found a man sitting under a tree, whom he taunted with being a thief, and threw mud and stones at him, until he broke the stranger's leg, who answered not the boy, nor resented the injuries he received, but remained silent and sorrowful; and, when his leg was broken, he tied it up in sticks, and bathed it in the river, and sat down again under the tree, and beckoned the boy to approach.

When the lad came near, the stranger told him he had something of great importance to reveal. "My son," said he, "did that old woman ever tell you about your father and mother?" "No," answered the boy; "I have never heard of them." "My son, do you see these bones scattered on the ground? Whose bones are these?" "How should I know?" answered the boy. "It may be that some elk or deer has been killed here." "No," said the old man. "Perhaps they are the bones of a bear;" but the old man shook his head. So the boy mentioned many other animals, but the stranger still sbook his head, and finally said, "These are the bones of your father; Stone Shirt killed him, and left him to rot here on the ground, like a wolf." And the boy was filled with indignation against the slayer of his father. Then the stranger asked, "Is your mother in yonder lodge?" and the boy replied, "No." "Does your mother live on the banks of this river?" and the boy answered, "I don't know my mother; I have never seen her; she is dead." "My son," replied the stranger, "Stone Shirt, who killed your father, stole your mother, and took her away to the shore of a distant lake, and there she is his wife to-day." And the boy wept bitterly, and while the tears filled his eyes so that he could not see, the stranger disappeared.

Then the boy was filled with wonder at what he had seen and heard, and malice grew in his heart against his father's enemy. He returned to the old woman, and said, "Grandmother, why have you lied to me about my father and mother?" and she answered not, for she knew that a ghost had told all to the boy. And the boy fell upon the ground weeping and sobbing, until he fell into a deep sleep, when strange things were told him.

His slumber continued three days and three nights, and when he awoke he said to his grandmother, "I am going away to enlist all nations in my fight," and straightway he departed.

(Here the boy's travels are related with many circumstances concerning the way he was received by the people, all given in a series of conversations, very lengthy; so they will be omitted.)

Finally, he returned in advance of the people whom he had enlisted, bringing with him *Cin-aw'-äv*, the wolf, and *To-go'-a*, the rattlesnake. When the three had eaten food, the boy said to the old woman: "Grandmother, cut me in two." But she demurred, saying she did not wish to kill one whom she loved so dearly. "Cut me in two," demanded the boy, and he gave her a stone ax which he had brought from a distant

country, and with a manner of great authority he again commanded her to cut him in two. So she stood before him, and severed him in twain, and fled in terror. And lo! each part took the form of an entire man, and the one beautiful boy appeared as two, and they were so much alike no one could tell them apart.

When the people or natives whom the boy had enlisted came pouring into the camp, *Cĭn-au'-ăv* and *To-go'-a* were engaged in telling them of the wonderful thing that had happened to the boy, and that now there were two; and they all held it to be an augury of a successful expedition to the land of Stone Shirt. And they started on their journey.

Now the boy had been told in the dream of his three days' slumber of a magical cup, and he had brought it home with him from his journey among the nations, and the *So'-kûs Waĭ'-ûn-äts* carried it between them, filled with water. *Cĭn-au'-ăv* walked on their right and *To-go'-a* on their left, and the nations followed in the order in which they had been enlisted. There was a vast number of them, so that when they were stretched out in line it was one day's journey from the front to the rear of the column.

When they had journeyed two days and were far out on the desert all the people thirsted, for they found no water, and they fell down upon the sand groaning, and murmuring that they had been deceived, and they cursed the One-Two.

But the *So'-kûs Waĭ'-ûn-äts* had been told in the wonderful dream of the suffering which would be endured and that the water which they carried in the cup was only to be used in dire necessity, and the brothers said to each other: "Now the time has come for us to drink the water." And when one had quaffed of the magical bowl, he found it still full, and he gave it to the other to drink, and still it was full; and the One-Two gave it to the people, and one after another did they all drink, and still the cup was full to the brim.

But *Cĭn-au'-ăv* was dead, and all the people mourned, for he was a great man. The brothers held the cup over him, and sprinkled him with water, when he arose and said: "Why do you disturb me? I did have a vision of mountain brooks and meadows, of cane where honey-dew was plenty." They gave him the cup, and he drank also; but when he had finished there was none left. Refreshed and rejoicing they proceeded on their journey.

The dext day, being without food, they were hungry, and all were about to perish; and again they murmured at the brothers, and cursed them. But the *So'-kûs Waĭ'-ûn-äts* saw in the distance an antelope, standing on an eminence in the plain, in bold relief against the sky; and *Cĭn-au'-ăv* knew it was the wonderful antelope with many eyes, which Stone Shirt kept for his watchman; and he proposed to go and kill it, but *To-go'-a* demurred, and said: "It were better that I should go, for he will see you and run away." But the *So'-kûs Waĭ'-ûn-äts* told *Cĭn'-au-ăv* to go; and he started in a direction away to the left of where

the antelope was standing, that he might make a long detour about some hills, and come upon him from the other side. *To-go'-a* went a little way from camp, and called to the brothers: "Do you see me?" and they answered they did not. "Hunt for me;" and while they were hunting for him, the rattlesnake said: "I can see you; you are doing" —so and so, telling them what they were doing; but they could not find him.

Then the rattlesnake came forth, declaring: "Now you know I can see others, and that I cannot be seen when I so desire. *Cin-aw'-äv* cannot kill that antelope, for he has many eyes, and is the wonderful watchman of Stone Shirt; but I can kill him, for I can go where he is and he cannot see me." So the brothers were convinced, and permitted him to go; and he went and killed the antelope. When *Cin-aw'-äv* saw it fall, he was very angry, for he was extremely proud of his fame as a hunter, and anxious to have the honor of killing this famous antelope, and he ran up with the intentlon of killing *To-go'-a;* but when he drew near, and saw the antelope was fat, and would make a rich feast for the people, his anger was appeased. "What matters it," said he, "who kills the game, when we can all eat it?"

So all the people were fed in abundance, and they proceeded on their journey.

The next day the people again suffered for water, and the magical cup was empty; but the *So'-kûs Waï'-ân-äts*, having been told in their dream what to do, transformed themselves into doves, and flew away to a lake, on the margin of which was the home of Stone Shirt.

Coming near to the shore, they saw two maidens bathing in the water; and the birds stood and looked, for the maidens were very beautiful. Then they flew into some bushes, near by, to have a nearer view, and were caught in a snare which the girls had placed for intrusive birds. The beautiful maidens came up, and, taking the birds out of the snare, admired them very much, for they had never seen such birds before. They carried them to their father, Stone Shirt, who said: "My daughters, I very much fear these are spies from my enemies, for such birds do not live in our land"; and he was about to throw them into the fire, when the maidens besought him, with tears, that he would not destroy their beautiful birds; but he yielded to their entreaties with much misgiving. Then they took the birds to the shore of the lake, and set them free.

When the birds were at liberty once more, they flew around among the bushes, until they found the magical cup which they had lost, and taking it up, they carried it out into the middle of the lake and settled down upon the water, and the maidens supposed they were drowned.

The birds, when they had filled their cup, rose again, and went back to the people in the desert, where they arrived just at the right time to save them with the cup of water, from which each drank; and yet it was full until the last was satisfied, and then not a drop remained.

The brothers reported that they had seen Stone Shirt and his daughters.

The next day they came near to the home of the enemy, and the brothers, in proper person, went out to reconnoiter. Seeing a woman gleaning seeds, they drew near, and knew it was their mother, whom Stone Shirt had stolen from *Sĭ-kor′*, the crane. They told her they were her sons, but she denied it, and said she had never had but one son; but the boys related to her their history, with the origin of the two from one, and she was convinced. She tried to dissuade them from making war upon Stone Shirt, and told them that no arrow could possibly penetrate his armor, and that he was a great warrior, and had no other delight than in killing his enemies, and that his daughters also were furnished with magical bows and arrows, which they could shoot so fast that the arrows would fill the air like a cloud, and that it was not necessary for them to take aim, for their missiles went where they willed; they *thought* the arrows to the hearts of their enemies; and thus the maidens could kill the whole of the people before a common arrow could be shot by a common person. But the boys told her what the spirit had said in the long dream, and had promised that Stone Shirt should be killed. They told her to go down to the lake at dawn, so as not to be endangered by the battle.

During the night, the *So′-kûs Waĭ′-ûn-ûts* transformed themselves into mice, and proceeded to the home of Stone Shirt, and found the magical bows and arrows that belonged to the maidens, and with their sharp teeth they cut the sinew on the backs of the bows, and nibbled the bowstrings, so that they were worthless, while *To-go′-a* hid himself under a rock near by.

When dawn came into the sky, *Tûm-pwĭ-naĭ′-ro-gwĭ-nûmp*, the Stone Shirt man, arose and walked out of his tent, exulting in his strength and security, and sat down upon the rock under which *To-go′-a* was hiding; and he, seeing his opportunity, sunk his fangs into the flesh of the hero. Stone Shirt sprang high into the air, and called to his daughters that they were betrayed, and that the enemy was near; and they seized their magical bows, and their quivers filled with magical arrows, and hurried to his defense. At the same time, all the nations who were surrounding the camp rushed down to battle. But the beautiful maidens, finding their weapons were destroyed, waved back their enemies, as if they would parley; and, standing for a few moments over the body of their slain father, sang the death-song, and danced the death-dance, whirling in giddy circles about the dead hero, and wailing with despair, until they sank down and expired.

The conquerers buried the maidens by the shores of the lake; but *Tûm-pwĭ-naĭ′-ro-gwĭ-nûmp* was left to rot, and his bones to bleach on the sands, as he had left *Sĭ-kor′*.

TA-VWOTS' HAS A FIGHT WITH THE SUN.

Ta-vwots', the little rabbit, was wont to lie with his back to the sun when he slept. One day he thus slept in camp while his children played around him. After a time they saw that his back was smoking, and they cried out "What is the matter with your back, father?" Startled from his sleep, he demanded to know the cause of the uproar. "Your back is covered with sores and full of holes," they replied. Then *Ta-vwots'* was very angry, for he knew that *Ta'-vĭ*, the sun, had burned him; and he sat down by the fire for a long time in solemn mood, pondering on the injury and insult he had received. At last rising to his feet, he said, "My children I must go and make war upon *Ta'-vĭ*." And straightway he departed.

Now his camp was in the valley of the Mo-a-pa.* On his journey he came to a hill, and standing on its summit he saw in a valley to the east a beautiful stretch of verdure, and he greatly marveled at the sight and desired to know what it was. On going down to the valley he found a corn-field, something he had never before seen, and the ears were ready for roasting. When he examined them, he saw that they were covered with beautiful hair, and he was much astonished. Then he opened the husk and found within soft white grains of corn, which he tasted. Then he knew that it was corn and good to eat. Plucking his arms full he carried them away, roasted them on a fire, and ate until he was filled.

Now, when he had done all this, he reflected that he had been stealing, and he was afraid; so he dug a hole in which to hide himself.

Cĭn-aw'-ăv was the owner of this field, and when he walked through and saw that his corn had been stolen, he was exceedingly wroth, and said, "I will slay this thief *Ta-vwots'*; I will kill him, I will kill him." And straightway he called his warriors to him and made search for the thief, but could not find him, for he was hid in the ground. After a long time they discovered the hole and tried to shoot *Ta-vwots'* as he was standing in the entrance, but he blew their arrows back. This made *Cĭn-aw'-ăv's* people very angry and they shot many arrows, but *Ta-vwots'* breath as a warder against them all. Then, with one accord, they ran to snatch him up with their hands, but, all in confusion, they only caught each others fists, for with agile steps *Ta-vwots'* dodged into his retreat. Then they began to dig, and said they would drag him out. And they labored with great energy, all the time taunting him with shouts and jeers. But *Ta-vwots'* had a secret passage from the main chamber of his retreat which opened by a hole above the rock overhanging the entrance where they were at work.

* A stream in Southeastern Nevada.

When they had proceeded with this digging until they were quite under ground, *Ta-vwots'*, standing on the rock above, hurled the magical ball which he was accustomed to carry with him, and striking the ground above the diggers, it caved the earth in, and they were all buried. "Aha," said he, "why do you wish to hinder me on my way to kill the Sun? *A'-nier ti-tik'-a-nûmp kwaik-ai'-gar*" (fighting is my eating tool I say; that's so!), and he proceeded on his way musing. "I have started out to kill; vengeance is my work; every one I meet will be an enemy. It is well; no one shall escape my wrath."

The next day he saw two men making arrow-heads of hot rocks, and drawing near he observed their work for a time from a position where he could not be seen. Then stepping forth, he said: "Let me help you"; and when the rocks were on the fire again and were hot to redness he said: "Hot rocks will not burn me." And they laughed at him. "May be you would have us believe that you are a ghost?" "I am not a ghost," said he, "but I am a better man than you are. Hold me on these hot rocks, and if I do not burn you must let me do the same to you." To this they readily agreed, and when they had tried to burn him on the rocks, with his magic breath he kept them away at a distance so slight they could not see but that the rocks did really touch him. When they perceived that he was not burned they were greatly amazed and trembled with fear. But having made the promise that he should treat them in like manner, they submitted themselves to the torture, and the hot rocks burned them until with great cries they struggled to get free, but unrelenting *Ta-vwots'* held them until the rocks had burned through their flesh into their entrails, and so they died. "Aha," said *Ta-vwots'*, "lie there until you can get up again. I am on my way to kill the Sun. *A'-nier ti-tik'-a-nûmp kwaik-ai'-gar.*" And sounding the war-whoop he proceeded on his way.

The next day he came to where two women were gathering berries in baskets, and when he sat down they brought him some of the fruit and placed it before him. He saw there were many leaves and thorns among the berries, and he said, "Blow these leaves and thorns into my eyes," and they did so, hoping to blind him; but with his magic breath he kept them away, so that they did not hurt him.

Then the women averred that he was a ghost. "I am no ghost," said he, "but a common person; do you not know that leaves and thorns cannot hurt the eye? Let me show you;" and they consented and were made blind. Then *Ta-vwots'* slew them with his *pa-rûm'-o-kwi*. "Aha," said he, "you are caught with your own chaff. I am on my way to kill the Sun. This is good practice. I must learn how. *À'-nier ti-tik'-a-nûmp kwaik-ai'-gar.*" And sounding the war-whoop he proceeded on his way.

The next day he saw some women standing on the Hurricane Cliff, and as he approached he heard them say to each other that they would roll rocks down upon his head and kill him as he passed; and drawing near

he pretended to be eating something, and enjoying it with great gusto; so they asked him what it was, and he said it was something very sweet, and they begged that they might be allowed to taste of it also. "I will throw it up to you," said he; "come to the brink and catch it." When they had done so, he threw it up so that they could not quite reach it, and he threw it in this way many times, until, in their eagerness to secure it, they all crowded too near the brink, fell, and were killed. "Aha," said he, "you were killed by your own eagerness. I am on my way to kill the Sun. *A'-nier ti-tĭk'-a-nûmp kaiwk-ai'-gar.*" And sounding the war-whoop he passed on.

The following day he saw two women fashioning water-jugs, which are made of willow-ware like baskets and afterwards lined with pitch. When afar off he could hear them converse, for he had a wonderful ear. "Here comes that bad *Ta-vwots'*," said they; "how shall we destroy him?" When he came near, he said, "What was that you were saying when I came up?" "Oh, we were only saying, 'here comes our grandson,'"* said they. "Is that all?" replied *Ta-vwots'*, and looking around, he said, "Let me get into your water-jug"; and they allowed him to do so. "Now braid the neck." This they did, making the neck very small; then they laughed with great glee, for they supposed he was entrapped. But with his magic breath he burst the jug, and stood up before them; and they exclaimed, "You must be a ghost!" but he answered, "I am no ghost. Do you not know that jugs were made to hold water, but cannot hold men and women?" At this they wondered greatly, and said he was wise. Then he proposed to put them in jugs in the same manner, in order to demonstrate to them the truth of what he had said; and they consented. When he had made the necks of the jugs and filled them with pitch, he said, "Now, jump out," but they could not. It was now his turn to deride; so he rolled them about and laughed greatly, while their half-stifled screams rent the air. When he had sported with them in this way until he was tired, he killed them with his magical ball. "Aha," said he, "you are bottled in your own jugs. I am on my way to kill the Sun; in good time I shall learn how. *A'-nier ti-tĭk'-a-nûmp kwaik-ai'-gar.*" And sounding the war-hoop he passed on.

The next day he came upon *Kwi'-ats*, the bear, who was digging a hole in which to hide, for he had heard of the fame of *Ta-vwots'*, and was afraid. When the great slayer came to *Kwi'-ats* he said, "Don't fear, my great friend; I am not the man from whom to hide. Could a little fellow like me kill so many people?" And the bear was assured. "Let me help you dig," said *Ta-vwots'*, that we may hide together, for I also am fleeing from the great destroyer. So they made a den deep in the ground, with its entrance concealed by a great rock. Now, *Ta-vwots'* secretly made a private passage from the den out to the side of the mountain, and when the work was completed the two went out together to the hill-top to watch for the coming of the enemy. Soon *Ta-*

* This is a very common term of endearment used by elder to younger persons.

vwots' pretended that he saw him coming, and they ran in great haste to the den. The little one outran the greater, and going into the den, hastened out again through his secret passage.

When *Kwi'-ats* entered he looked about, and not seeing his little friend he searched for him for some time, and still not finding him, he supposed that he must have passed him on the way, and went out again to see if he had stopped or been killed. By this time *Ta-vwots'* had perched himself on the rock at the entrance of the den, and when the head of the bear protruded through the hole below he hurled his *pa-rûm'-o-kwi* and killed him. "Aha," said *Ta-vwots'*, "I greatly feared this renowned warrior, but now he is dead in his own den. I am going to kill the Sun. *A'-nier ti'-tik'-a'-nûmp kwaik-ai'-gar.*" And sounding the war-whoop he went on his way.

The next day he met *Ku-mi'-a-pöts*, the tarantula. Now this knowing personage had heard of the fame of *Ta-vwots'*, and determined to outwit him. He was possessed of a club with such properties that, although it was a deadly weapon when used against others, it could not be made to hurt himself, though weilded by a powerful arm.

As *Ta-vwots'* came near, *Ku-mi'-a-pöts* complained of having a headache; moaning and groaning, he said there was an *u-nw'-pits*, or little evil spirit, in his head, and he asked *Ta-vwots'* to take the club and beat it out. *Ta-vwots'* obeyed, and struck with all his power, and wondered that *Ku-mi'-a-pots* was not killed; but he urged *Ta-vwots'* to strike harder. At last *Ta-vwots'* understood the nature of the club, and guessed the wiles of *Ku-mi'-a-pots*, and raising the weapon as if to strike again, he dexterously substituted his magic ball and slew him. "Aha," said he, "that is a blow of your own seeking, *Ku-mi'-a-pots*. I am on my way to kill the Sun; now I know that I can do it. *A'-nier ti-tik'-a'-nûmp kwaik-ai'-gar.*" And sounding the war-whoop he went on his way.

The next day he came to a cliff which is the edge or boundary of the world on the east, where careless persons have fallen into unknown depths below. Now to come to the summit of this cliff it is necessary to climb a mountain, and *Ta-vwots'* could see three gaps or notches in the mountain, and he went up into the one on the left; and he demanded to know of all the trees which where standing by of what use they were. Each one in turn praised its own qualities, the chief of which in every case was its value as fuel.* *Ta-vwots'* shook his head and went into the center gap and had another conversation with the trees, receiving the same answer. Finally he went into the third gap—that on the right. After he had questioned all the trees and bushes, he came at last to a little one called *yw'-i-nump*, which modestly said it had no use, that it was not even fit for fuel. "Good," said *Ta-vwots'*, and under it he lay down to sleep.

* Several times I have heard this story, and invariably the dialogues held by *Ta-vwots'* with the trees are long and tedious, though the trees evince some skill in their own praise.

When the dawn came into the sky *Ta-vwots'* arose and stood on the brink overhanging the abyss from which the Sun was about to rise. The instant it appeared he hurled his *pa-rúm'-o-kwi*, and, striking it full in the face, shattered it into innumerable fragments, and these fragments were scattered over all the world and kindled a great conflagration. *Ta-vwots'* ran and crept under the *yw'-i-nump* to obtain protection. At last the fire waxed very hot over all the world, and soon *Ta-vwots'* began to suffer and tried to run away, but as he ran his toes were burned off, and then slowly, inch by inch, his legs, and then his body, so that he walked on his hands, and these were burned, and he walked on the stumps of his arms, and these were burned, until there was nothing left but his head. And now, having no other means of progression, his head rolled along the ground until his eyes, which were much swollen, burst by striking against a rock, and the tears gushed out in a great flood which spread out over all the land and extinguished the conflagration.

The *Uinta Utes* add something more to this story, namely, that the flood from his eyes bore out new seeds, which were scattered over all the world. The *Ute* name for seed is the same as for eye.

Those animals which are considered as the descendants of *Ta-vwots'* are characterized by a brown patch back of the neck and shoulders, which is attributed to the singeing received by him in the great fire.

The following apothegms are derived from this story:

"You are buried in the hole which you dug for yourself."

"When you go to war every one you meet is an enemy; kill all."

"You were caught with your own chaff."

"Don't get so anxious that you kill yourself."

"You are bottled in your own jugs."

"He is dead in his own den."

"That is a blow of your own seeking."

SMITHSONIAN INSTITUTION——BUREAU OF ETHNOLOGY.

J. W. POWELL, DIRECTOR.

WYANDOT GOVERNMENT:

A SHORT STUDY OF TRIBAL SOCIETY.

BY

J. W. POWELL.

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By J. W. Powell.

In the social organization of the Wyandots four groups are recognized—the family, the gens, the phratry, and the tribe.

THE FAMILY.

The family, as the term is here used, is nearly synonymous with the household. It is composed of the persons who occupy one lodge, or, in their permanent wigwams, one section of a communal dwelling. These permanent dwellings are constructed in an oblong form, of poles interwoven with bark. The fire is placed in line along the center, and is usually built for two families, one occupying the place on each side of the fire.

The head of the family is a woman.

THE GENS.

The gens is an organized body of consanguineal kindred in the female line. "The woman carries the gens," is the formulated statement by which a Wyandot expresses the idea that descent is in the female line. Each gens has the name of some animal, the ancient of such animal being its tutelar god. Up to the time that the tribe left Ohio, eleven gentes were recognized, as follows:

Deer, Bear, Highland Turtle (striped), Highland Turtle (black), Mud Turtle, Smooth Large Turtle, Hawk, Beaver, Wolf, Sea Snake, and Porcupine.

In speaking of an individual he is said to be a wolf, a bear, or a deer, as the case may be, meaning thereby that he belongs to that gens; but in speaking of the body of people comprising a gens, they are said to be relatives of the wolf, the bear, or the deer, as the case may be.

There is a body of names belonging to each gens, so that each person's name indicates the gens to which he belongs. These names are

derived from the characteristics, habits, attitudes, or mythologic stories connected with the tutelar god.

The following schedule presents the name of a man and a woman in each gens, as illustrating this statement:

	Wun-dát.	English.
Man of Deer gens	De-wa-tí-re	Lean Deer.
Woman of Deer gens	A-ya-jin-ta	Spotted Fawn.
Man of Bear gens	A-tu-e-tês	Long Claws.
Woman of Bear gens	Tsá-ma^{n}-da-ka-é	Grunting for her Young.
Man of Striped Turtle gens	Ta-há-so^{n}-ta-ra-ta-se	Going Around the Lake.
Woman of Striped Turtle gens	Tso-we-yuñ-kyu	Gone from the Water.
Man of Mud Turtle gens	Sha-yäu-tsu-wat'	Hard Skull.
Woman of Mud Turtle gens	Ya^{n}-däc-u-rās	Finding Sand Beach.
Man of Smooth Large Turtle gens	Hu^{n}'-du-cu-tá	Throwing Sand.
Woman of Smooth Large Turtle gens	Tsu-ca-e^{n}	Slow Walker.
Man of Wolf gens	Ha-ró-u^{n}-yû	One who goes about in the Dark; a Prowler.
Woman of Wolf gens	Ya^{n}-di-no	Always Hungry.
Man of Snake gens	Hu-ta-hú-sa	Sitting in curled Position.
Woman of Snake gens	Di-jé-rons	One who Ripples the Water.
Man of Porcupine gens	Ha^{n}-dú-tu^{n}	The one who puts up Quills.
Woman of Porcupine gens	Ké-ya-runs-kwa	Good-Sighted.

THE PHRATRY.

There are four phratries in the tribe, the three gentes Bear, Deer, and Striped Turtle constituting the first; the Highland Turtle, Black Turtle, and Smooth Large Turtle the second; the Hawk, Beaver, and Wolf the third, and the Sea Snake and Porcupine the fourth.

This unit in their organization has a mythologic basis, and is chiefly used for religious purposes, in the preparation of medicines, and in festivals and games.

The eleven gentes, as four phratries, constitute the tribe.

Each gens is a body of consanguineal kindred in the female line, and each gens is allied to other gentes by consanguineal kinship through the male line, and by affinity through marriage.

To be a member of the tribe it is necessary to be a member of a gens; to be a member of a gens it is necessary to belong to some family; and to belong to a family a person must have been born in the family so that his kinship is recognized, or he must be adopted into a family and become a son, brother, or some definite relative; and this artificial relationship gives him the same standing as actual relationship in the family, in the gens, in the phratry, and in the tribe.

Thus a tribe is a body of kindred.

Of the four groups thus described, the gens, the phratry, and the tribe constitute the series of organic units; the family, or household as here described, is not a unit of the gens or phratry, as two gentes are represented in each—the father must belong to one gens, and the mother and her children to another.

GOVERNMENT.

Society is maintained by the establishment of government, for rights must be recognized and duties performed.

In this tribe there is found a complete differentiation of the military from the civil government.

CIVIL GOVERNMENT.

The civil government inheres in a system of councils and chiefs.

In each gens there is a council, composed of four women, called *Yu-wai-yu-wá-na.* These four women councillors select a chief of the gens from its male members—that is, from their brothers and sons. This gentile chief is the head of the gentile council.

The council of the tribe is composed of the aggregated gentile councils. The tribal council, therefore, is composed one-fifth of men and four-fifths of women.

The sachem of the tribe, or tribal chief, is chosen by the chiefs of the gentes.

There is sometimes a grand council of the gens, composed of the councillors of the gens proper and all the heads of households and leading men—brothers and sons.

There is also sometimes a grand council of the tribe, composed of the council of the tribe proper and the heads of households of the tribe, and all the leading men of the tribe.

These grand councils are convened for special purposes.

METHODS OF CHOOSING AND INSTALLING COUNCILLORS AND CHIEFS.

The four women councillors of the gens are chosen by the heads of households, themselves being women. There is no formal election, but frequent discussion is had over the matter from time to time, in which a sentiment grows up within the gens and throughout the tribe that, in the event of the death of any councillor, a certain person will take her place.

In this manner there is usually one, two, or more potential councillors in each gens who are expected to attend all the meetings of the council, though they take no part in the deliberations and have no vote.

When a woman is installed as councillor a feast is prepared by the gens to which she belongs, and to this feast all the members of the tribe are invited. The woman is painted and dressed in her best attire and the sachem of the tribe places upon her head the gentile chaplet of feathers, and announces in a formal manner to the assembled guests that

the woman has been chosen a councillor. The ceremony is followed by feasting and dancing, often continued late into the night.

The gentile chief is chosen by the council women after consultation with the other women and men of the gens. Often the gentile chief is a potential chief through a period of probation. During this time he attends the meetings of the council, but takes no part in the deliberations, and has no vote.

At his installation, the council women invest him with an elaborately ornamented tunic, place upon his head a chaplet of feathers, and paint the gentile totem on his face. The sachem of the tribe then announces to the people that the man has been made chief of the gens, and admitted to the council. This is also followed by a festival.

The sachem of the tribe is selected by the men belonging to the council of the tribe. Formerly the sachemship inhered in the Bear gens, but at present he is chosen from the Deer gens, from the fact, as the Wyandots say, that death has carried away all the wise men of the Bear gens.

The chief of the Wolf gens is the herald and the sheriff of the tribe. He superintends the erection of the council-house and has the care of it. He calls the council together in a formal manner when directed by the sachem. He announces to the tribe all the decisions of the council, and executes the directions of the council and of the sachem.

Gentile councils are held frequently from day to day and from week to week, and are called by the chief whenever deemed necessary. When matters before the council are considered of great importance, a grand council of the gens may be called.

The tribal council is held regularly on the night of the full moon of each lunation and at such other times as the sachem may determine; but extra councils are usually called by the sachem at the request of a number of councilors.

Meetings of the gentile councils are very informal, but the meetings of the tribal councils are conducted with due ceremony. When all the persons are assembled, the chief of the Wolf gens calls them to order, fills and lights a pipe, sends one puff of smoke to the heavens and another to the earth. The pipe is then handed to the sachem, who fills his mouth with smoke, and, turning from left to right with the sun, slowly puffs it out over the heads of the councilors, who are sitting in a circle. He then hands the pipe to the man on his left, and it is smoked in turn by each person until it has been passed around the circle. The sachem then explains the object for which the council is called. Each person in the way and manner he chooses tells what he thinks should be done in the case. If a majority of the council is agreed as to action, the sachem does not speak, but may simply announce the decision. But in some cases there may be protracted debate, which is carried on with great deliberation. In case of a tie, the sachem is expected to speak.

It is considered dishonorable for any man to reverse his decision after having spoken.

Such are the organic elements of the Wyandot government.

FUNCTIONS OF CIVIL GOVERMENT.

It is the function of government to preserve rights and enforce the performance of duties. Rights and duties are co-relative. Rights imply duties, and duties imply rights. The right inhering in the party of the first part imposes a duty on the party of the second part. The right and its co-relative duty are inseparable parts of a relation that must be maintained by government; and the relations which governments are established to maintain may be treated under the general head of rights.

In Wyandot government these rights may be classed as follows:

First—Rights of marriage.

Second—Rights to names.

Third—Rights to personal adornments.

Fourth—Rights of order in encampments and migrations

Fifth—Rights of property.

Sixth—Rights of person.

Seventh—Rights of community.

Eighth—Rights of religion.

To maintain rights, rules of conduct are established, not by formal enactment, but by regulated usage. Such custom-made laws may be called regulations.

MARRIAGE REGULATIONS.

Marriage between members of the same gens is forbidden, but consanguineal marriages between persons of different gentes are permitted. For example, a man may not marry his mother's sister's daughter, as she belongs to the same gens with himself; but he can marry his father's sister's daughter, because she belongs to a different gens.

Husbands retain all their rights and privileges in their own gentes, though they live with the gentes of their wives. Children, irrespective of sex, belong to the gens of the mother. Men and women must marry within the tribe. A woman taken to wife from without the tribe must first be adopted into some family of a gens other than that to which the man belongs. That a woman may take for a husband a man without the tribe he must also be adopted into the family of some gens other than that of the woman. What has been called by some ethnologists endogamy and exogamy are correlative parts of one regulation, and the Wyandots, like all other tribes of which we have any knowledge in North America, are both endogamous and exogamous.

Polygamy is permitted, but the wives must belong to different gentes. The first wife remains the head of the household. Polyandry is prohibited.

A man seeking a wife consults her mother, sometimes direct, and sometimes through his own mother. The mother of the girl advises with the women councilors to obtain their consent, and the young peo-

ple usually submit quietly to their decision. Sometimes the women councilors consult with the men.

When a girl is betrothed, the man makes such presents to the mother as he can. It is customary to consummate the marriage before the end of the moon in which the betrothal is made. Bridegroom and bride make promises of faithfulness to the parents and women councilors of both parties. It is customary to give a marriage feast, in which the gentes of both parties take part. For a short time at least, bride and groom live with the bride's mother, or rather in the original household of the bride.

The time when they will set up housekeeping for themselves is usually arranged before marriage.

In the event of the death of the mother, the children belong to her sister or to her nearest female kin, the matter being settled by the council women of the gens. As the children belong to the mother, on the death of the father the mother and children are cared for by her nearest male relative until subsequent marriage.

NAME REGULATIONS.

It has been previously explained that there is a body of names, the exclusive property of each gens. Once a year, at the green-corn festival, the council women of the gens select the names for the children born during the previous year, and the chief of the gens proclaims these names at the festival. No person may change his name, but every person, man or woman, by honorable or dishonorable conduct, or by remarkable circumstance, may win a second name commemorative of deed or circumstance, which is a kind of title.

REGULATIONS OF PERSONAL ADORNMENT.

Each clan has a distinctive method of painting the face, a distinctive chaplet to be worn by the gentile chief and council women when they are inaugurated, and subsequently at festival occasions, and distinctive ornaments for all its members, to be used at festivals and religious ceremonies.

REGULATIONS OF ORDER IN ENCAMPMENT AND MIGRATIONS.

The camp of the tribe is in an open circle or horse-shoe, and the gentes camp in following order, beginning on the left and going around to the right:

Deer, Bear, Highland Turtle (striped), Highland Turtle (black), Mud Turtle, Smooth Large Turtle, Hawk, Beaver, Wolf, Sea Snake, Porcupine.

The order in which the households camp in the gentile group is regulated by the gentile councilors and adjusted from time to time in such a manner that the oldest family is placed on the left, and the youngest on the right. In migrations and expeditions the order of travel follows the analogy of encampment.

PROPERTY RIGHTS.

Within the area claimed by the tribe each gens occupies a smaller tract for the purpose of cultivation. The right of the gens to cultivate a particular tract is a matter settled in the council of the tribe, and the gens may abandon one tract for another only with the consent of the tribe. The women councillors partition the gentile land among the householders, and the household tracts are distinctly marked by them. The ground is re-partitioned once in two years. The heads of households are responsible for the cultivation of the tract, and should this duty be neglected the council of the gens calls the responsible parties to account.

Cultivation is communal; that is, all of the able-bodied women of the gens take part in the cultivation of each household tract in the following manner:

The head of the household sends her brother or son into the forest or to the stream to bring in game or fish for a feast; then the able-bodied women of the gens are invited to assist in the cultivation of the land, and when this work is done a feast is given.

The wigwam or lodge and all articles of the household belong to the woman—the head of the household—and at her death are inherited by her eldest daughter, or nearest of female kin. The matter is settled by the council women. If the husband die his property is inherited by his brother or his sister's son, except such portion as may be buried with him. His property consists of his clothing, hunting and fishing implements, and such articles as are used personally by himself.

Usually a small canoe is the individual property of the man. Large canoes are made by the male members of the gentes, and are the property of the gentes.

RIGHTS OF PERSON.

Each individual has a right to freedom of person and security from personal and bodily injury, unless adjudged guilty of crime by proper authority.

COMMUNITY RIGHTS.

Each gens has the right to the services of all its women in the cultivation of the soil. Each gens has the right to the service of all its male members in avenging wrongs, and the tribe has the right to the service of all its male members in time of war.

RIGHTS OF RELIGION.

Each phratry has the right to certain religious ceremonies and the preparation of certain medicines.

Each gens has the exclusive right to worship its tutelar god, and each individual has the exclusive right to the possession and use of a particular amulet.

CRIMES.

The violations of right are crimes. Some of the crimes recognized by the Wyandots are as follows:

1. Adultery.
2. Theft.
3. Maiming.
4. Murder.
5. Treason.
6. Witchcraft.

A maiden guilty of fornication may be punished by her mother or female guardian, but if the crime is flagrant and repeated, so as to become a matter of general gossip, and the mother fails to correct it, the matter may be taken up by the council women of the gens.

A woman guilty of adultery, for the first offense is punished by having her hair cropped; for repeated offenses her left ear is cut off.

THEFT.

The punishment for theft is twofold restitution. When the prosecutor and prosecuted belong to the same gens, the trial is before the council of the gens, and from it there is no appeal. If the parties involved are of different gentes, the prosecutor, through the head of his household, lays the matter before the council of his own gens; by it the matter is laid before the gentile council of the accused in a formal manner. Thereupon it becomes the duty of the council of the accused to investigate the facts for themselves, and to settle the matter with the council of the plaintiff. Failure thus to do is followed by retaliation in the seizing of any property of the gens which may be found.

MAIMING.

Maiming is compounded, and the method of procedure in prosecution is essentially the same as for theft.

MURDER.

In the case of murder, if both parties are members of the same gens, the matter is tried by the gentile council on complaint of the head of the household, but there may be an appeal to the council of the tribe. Where the parties belong to different gentes, complaint is formally made by the injured party, through the chief of his gens, in the following manner:

A wooden tablet is prepared, upon which is inscribed the totem or heraldic emblem of the injured man's gens, and a picture-writing setting forth the offense follows.

The gentile chief appears before the chief of the council of the offender, and formally states the offense, explaining the picture-writing, which is then delivered.

A council of the offender's gens is thereupon called and a trial is held. It is the duty of this council to examine the evidence for themselves and

to come to a conclusion without further presentation of the matter on the part of the person aggrieved. Having decided the matter among themselves, they appear before the chief of the council of the aggrieved party to offer compensation.

If the gens of the offender fail to settle the matter with the gens of the aggrieved party, it is the duty of his nearest relative to avenge the wrong. Either party may appeal to the council of the tribe. The appeal must be made in due form, by the presentation of a tablet of accusation.

Inquiry into the effect of a failure to observe prescribed formalities developed an interesting fact. In procedure against crime, failure in formality is not considered a violation of the rights of the accused, but proof of his innocence. It is considered supernatural evidence that the charges are false. In trials for all offenses forms of procedure are, therefore, likely to be earnestly questioned.

TREASON.

Treason consists in revealing the secrets of the medicine preparations or giving other information or assistance to enemies of the tribe, and is punished by death. The trial is before the council of the tribe.

WITCHCRAFT.

Witchcraft is punished by death, stabbing, tomahawking, or burning. Charges of witchcraft are investigated by the grand council of the tribe. When the accused is adjudged guilty, he may appeal to supernatural judgment. The test is by fire. A circular fire is built on the ground, through which the accused must run from east and west and from north to south. If no injury is received he is adjudged innocent; if he falls into the fire he is adjudged guilty. Should a person accused or having the general reputation of practicing witchcraft become deaf, blind, or have sore eyes, earache, headache, or other diseases considered loathsome, he is supposed to have failed in practicing his arts upon others, and to have fallen a victim to them himself. Such cases are most likely to be punished.

OUTLAWRY.

The institution of outlawry exists among the Wyandots in a peculiar form. An outlaw is one who by his crimes has placed himself without the protection of his clan. A man can be declared an outlaw by his own clan, who thus publish to the tribe that they will not defend him in case he is injured by another. But usually outlawry is declared only after trial before the tribal council.

The method of procedure is analogous to that in case of murder. When the person has been adjudged guilty and sentence of outlawry declared, it is the duty of the chief of the Wolf clan to make known the decision of the council. This he does by appearing before each clan in the order

of its encampment, and declaring in terms the crime of the outlaw and the sentence of outlawry, which may be either of two grades.

In the lowest grade it is declared that if the man shall thereafter continue in the commission of similar crimes, it will be lawful for any person to kill him; and if killed, rightfully or wrongfully, his clan will not avenge his death.

Outlawry of the highest degree makes it the duty of any member of the tribe who may meet with the offender to kill him.

MILITARY GOVERNMENT.

The management of military affairs inheres in the military council and chief. The military council is composed of all the able-bodied men of the tribe; the military chief is chosen by the council from the Porcupine gens. Each gentile chief is responsible for the military training of the youth under his authority. There is usually one or more potential military chiefs, who are the close companions and assistants of the chief in time of war, and in case of the death of the chief, take his place in the order of seniority.

Prisoners of war are adopted into the tribe or killed. To be adopted into the tribe, it is necessary that the prisoner should be adopted into some family. The warrior taking the prisoner has the first right to adopt him, and his male or female relatives have the right in the order of their kinship. If no one claims the prisoner for this purpose, he is caused to run the gauntlet as a test of his courage.

If at his trial he behaves manfully, claimants are not wanting, but if he behaves disgracefully he is put to death.

FELLOWHOOD.

There is an interesting institution found among the Wyandots, as among some other of our North American tribes, namely, that of fellowhood. Two young men agree to be perpetual friends to each other, or more than brothers. Each reveals to the other the secrets of his life, and counsels with him on matters of importance, and defends him from wrong and violence, and at his death is chief mourner.

The government of the Wyandots, with the social organization upon which it is based, affords a typical example of tribal government throughout North America. Within that area there are several hundred distinct governments. In so great a number there is great variety, and in this variety we find different degrees of organization, the degrees of organization being determined by the differentiation of the functions of the government and the correlative specialization of organic elements.

Much has yet to be done in the study of these governments before safe generalizations may be made. But enough is known to warrant the following statement:

Tribal government in North America is based on kinship in that the fundamental units of social organization are bodies of consanguineal

kindred either in the male or female line; these units being what has been well denominated "gentes."

These "gentes" are organized into tribes by ties of relationship and affinity, and this organization is of such a character that the man's position in the tribe is fixed by his kinship. There is no place in a tribe for any person whose kinship is not fixed, and only those persons can be adopted into the tribe who are adopted into some family with artificial kinship specified. The fabric of Indian society is a complex tissue of kinship. The warp is made of streams of kinship blood, and the woof of marriage ties.

With most tribes military and civil affairs are differentiated. The functions of civil government are in general differentiated only to this extent, that executive functions are performed by chiefs and sachems, but these chiefs and sachems are also members of the council. The council is legislature and court. Perhaps it were better to say that the council is the court whose decisions are law, and that the legislative body properly has not been developed.

In general, crimes are well defined. Procedure is formal, and forms are held as of such importance that error therein is *prima facie* evidence that the subject-matter formulated was false.

When one gens charges crime against a member of another, it can of its own motion proceed only to retaliation. To prevent retaliation, the gens of the offender must take the necessary steps to disprove the crime, or to compound or punish it. The charge once made is held as just and true until it has been disproved, and in trial the cause of the defendant is first stated. The anger of the prosecuting gens must be placated.

In the tribal governments there are many institutions, customs, and traditions which give evidence of a former condition in which society was based not upon kinship, but upon marriage.

From a survey of the facts it seems highly probably that kinship society, as it exists among the tribes of North America, has developed from connubial society, which is discovered elsewhere on the globe. In fact, there are a few tribes that seem scarcely to have passed that indefinite boundary between the two social states. Philologic research leads to the same conclusion.

Nowhere in North America have a people been discovered who have passed beyond tribal society to national society based on property, *i. e.*, that form of society which is characteristic of civilization. Some peoples may not have reached kinship society; none have passed it.

Nations with civilized institutions, art with palaces, monotheism as the worship of the Great Spirit, all vanish from the priscan condition of North America in the light of anthropologic research. Tribes with the social institutions of kinship, art with its highest architectural development exhibited in the structure of communal dwellings, and polytheism in the worship of mythic animals and nature-gods remain.

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J. W. POWELL, DIRECTOR.

ON LIMITATIONS TO THE USE

OF SOME

ANTHROPOLOGIC DATA.

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ARCHÆOLOGY.

Investigations in this department are of great interest, and have attracted to the field a host of workers; but a general review of the mass of published matter exhibits the fact that the uses to which the material has been put have not always been wise.

In the monuments of antiquity found throughout North America, in camp and village sites, graves, mounds, ruins, and scattered works of art, the origin and development of art in savage and barbaric life may be satisfactorily studied. Incidentally, too, hints of customs may be discovered, but outside of this, the discoveries made have often been illegitimately used, especially for the purpose of connecting the tribes of North America with peoples or so-called races of antiquity in other portions of the world. A brief review of some conclusions that must be accepted in the present status of the science will exhibit the futility of these attempts.

It is now an established fact that man was widely scattered over the earth at least as early as the beginning of the quaternary period, and, perhaps, in pliocene time.

If we accept the conclusion that there is but one species of man, as species are now defined by biologists, we may reasonably conclude that the species has been dispersed from some common center, as the ability to successfully carry on the battle of life in all climes belongs only to a highly developed being; but this original home has not yet been ascertained with certainty, and when discovered, lines of migration therefrom cannot be mapped until the changes in the physical geography of the earth from that early time to the present have been discovered, and these must be settled upon purely geologic and paleontologic evidence. The migrations of mankind from that original home cannot be intelligently discussed until that home has been discovered, and, further, until the geology of the globe is so thoroughly known that the different phases of its geography can be presented.

The dispersion of man must have been anterior to the development of any but the rudest arts. Since that time the surface of the earth

has undergone many and important changes. All known camp and village sites, graves, mounds, and ruins belong to that portion of geologic time known as the present epoch, and are entirely subsequent to the period of the original dispersion as shown by geologic evidence.

In the study of these antiquities, there has been much unnecessary speculation in respect to the relation existing between the people to whose existence they attest, and the tribes of Indians inhabiting the country during the historic period.

It may be said that in the Pueblos discovered in the southwestern portion of the United States and farther south through Mexico and perhaps into Central America tribes are known having a culture quite as far advanced as any exhibited in the discovered ruins. In this respect, then, there is no need to search for an extra-limital origin through lost tribes for any art there exhibited.

With regard to the mounds so widely scattered between the two oceans, it may also be said that mound-building tribes were known in the early history of discovery of this continent, and that the vestiges of art discovered do not excel in any respect the arts of the Indian tribes known to history. There is, therefore, no reason for us to search for an extra-limital origin through lost tribes for the arts discovered in the mounds of North America.

The tracing of the origin of these arts to the ancestors of known tribes or stocks of tribes is more legitimate, but it has limitations which are widely disregarded. The tribes which had attained to the highest culture in the southern portion of North America are now well known to belong to several different stocks, and, if, for example, an attempt is made to connect the mound-builders with the Pueblo Indians, no result beyond confusion can be reached until the particular stock of these village peoples is designated.

Again, it is contained in the recorded history of the country that several distinct stocks of the present Indians were mound-builders and the wide extent and vast number of mounds discovered in the United States should lead us to suspect, at least, that the mound-builders of pre-historic times belonged to many and diverse stocks. With the limitations thus indicated the identification of mound-building peoples as distinct tribes or stocks is a legitimate study, but when we consider the further fact now established, that arts extend beyond the boundaries of linguistic stocks, the most fundamental divisions we are yet able to make of the peoples of the globe, we may more properly conclude that this field promises but a meager harvest; but the origin and development of arts and industries is in itself a vast and profoundly interesting theme of study, and when North American archæology is pursued with this end in view, the results will be instructive.

PICTURE-WRITING.

The pictographs of North America were made on divers substances. The bark of trees, tablets of wood, the skins of animals, and the surfaces of rocks were all used for this purpose; but the great body of picture-writing as preserved to us is found on rock surfaces, as these are the most enduring.

From Dighton Rock to the cliffs that overhang the Pacific, these records are found—on bowlders fashioned by the waves of the sea, scattered by river floods, or polished by glacial ice; on stones buried in graves and mounds; on faces of rock that appear in ledges by the streams; on cañon walls and towering cliffs; on mountain crags and the ceilings of caves—wherever smooth surfaces of rock are to be found in North America, there we may expect to find pictographs. So widely distributed and so vast in number, it is well to know what purposes they may serve in anthropologic science.

Many of these pictographs are simply pictures, rude etchings, or paintings, delineating natural objects, especially animals, and illustrate simply the beginning of pictorial art; others we know were intended to commemorate events or to represent other ideas entertained by their authors; but to a large extent these were simply mnemonic—not conveying ideas of themselves, but designed more thoroughly to retain in memory certain events or thoughts by persons who were already cognizant of the same through current hearsay or tradition. If once the memory of the thought to be preserved has passed from the minds of men, the record is powerless to restore its own subject-matter to the understanding.

The great body of picture-writings is thus described; yet to some slight extent pictographs are found with characters more or less conventional, and the number of such is quite large in Mexico and Central America. Yet even these conventional characters are used with others less conventional in such a manner that perfect records were never made.

Hence it will be seen that it is illegitimate to use any pictographic matter of a date anterior to the discovery of the continent by Columbus for historic purposes; but it has a legitimate use of profound interest, as these pictographs exhibit the beginning of written language and the beginning of pictorial art, yet undifferentiated; and if the scholars of America will collect and study the vast body of this material scattered everywhere—over the valleys and on the mountain sides—from it can be written one of the most interesting chapters in the early history of mankind.

HISTORY, CUSTOMS, AND ETHNIC CHARACTERISTICS.

When America was discovered by Europeans, it was inhabited by great numbers of distinct tribes, diverse in languages, institutions, and customs. This fact has never been fully recognized, and writers have too often spoken of the North American Indians as a body, supposing that statements made of one tribe would apply to all. This fundamental error in the treatment of the subject has led to great confusion.

Again, the rapid progress in the settlement and occupation of the country has resulted in the gradual displacement of the Indian tribes, so that very many have been removed from their ancient homes, some of whom have been incorporated into other tribes, and some have been absorbed into the body of civilized people.

The names by which tribes have been designated have rarely been names used by themselves, and the same tribe has often been designated by different names in different periods of its history and by different names in the same period of its history by colonies of people having different geographic relations to them. Often, too, different tribes have been designated by the same name. Without entering into an explanation of the causes which have led to this condition of things, it is simply necessary to assert that this has led to great confusion of nomenclature. Therefore the student of Indian history must be constantly on his guard in accepting the statements of any author relating to any tribe of Indians.

It will be seen that to follow any tribe of Indians through post-Columbian times is a task of no little difficulty. Yet this portion of history is of importance, and the scholars of America have a great work before them.

Three centuries of intimate contact with a civilized race has had no small influence upon the pristine condition of these savage and barbaric tribes. The most speedy and radical change was that effected in the arts, industrial and ornamental. A steel knife was obviously better than a stone knife; firearms than bows and arrows; and textile fabrics from the looms of civilized men are at once seen to be more beautiful and more useful than the rude fabrics and undressed skins with which the Indians clothed themselves in that earlier day.

Customs and institutions changed less rapidly. Yet these have been much modified. Imitation and vigorous propagandism have been more or less efficient causes. Migrations and enforced removals placed tribes under conditions of strange environment where new customs and institutions were necessary, and in this condition civilization had a greater influence, and the progress of occupation by white men within the territory of the United States, at least, has reached such a stage that savagery and barbarism have no room for their existence, and even customs

and institutions must in a brief time be completely changed, and what we are yet to learn of these people must be learned now.

But in pursuing these studies the greatest caution must be observed in discriminating what is primitive from what has been acquired from civilized man by the various processes of acculturation.

ORIGIN OF MAN.

Working naturalists postulate evolution. Zoölogical research is largely directed to the discovery of the genetic relations of animals. The evolution of the animal kingdom is along multifarious lines and by diverse specializations. The particular line which connects man with the lowest forms, through long successions of intermediate forms, is a problem of great interest. This special investigation has to deal chiefly with relations of structure. From the many facts already recorded, it is probable that many detached portions of this line can be drawn, and such a construction, though in fact it may not be correct in all its parts, yet serves a valuable purpose in organizing and directing research.

The truth or error of such hypothetic genealogy in no way affects the validity of the doctrines of evolution in the minds of scientific men, but on the other hand the value of the tentative theory is brought to final judgment under the laws of evolution.

It would be vain to claim that the course of zoölogic development is fully understood, or even that all of its most important factors are known. So the discovery of facts and relations guided by the doctrines of evolution reacts upon these doctrines, verifying, modifying, and enlarging them. Thus it is that while the doctrines lead the way to new fields of discovery, the new discoveries lead again to new doctrines. Increased knowledge widens philosophy; wider philosophy increases knowledge.

It is the test of true philosophy that it leads to the discovery of facts, and facts themselves can only be known as such; that is, can only be properly discerned and discriminated by being relegated to their places in philosophy. The whole progress of science depends primarily upon this relation between knowledge and philosophy.

In the earlier history of mankind philosophy was the product of subjective reasoning, giving mythologies and metaphysics. When it was discovered that the whole structure of philosophy was without foundation, a new order of procedure was recommended—the Baconian method. Perception must precede reflection; observation must precede reason. This also was a failure. The earlier gave speculations; the later gave a mass of incoherent facts and falsehoods. The error in the earlier philosophy was not in the order of procedure between perception and reflection, but in the method, it being subjective instead of objective. The method of reasoning in scientific philosophy is purely objective; the method of reasoning in mythology and metaphysics is subjective.

The difference between man and the animals most nearly related to him in structure is great. The connecting forms are no longer extant. This subject of research, therefore, belongs to the paleontologists rather than the ethnologists. The biological facts are embraced in the geological record, and this record up to the present time has yielded but scant materials to serve in its solution.

It is known that man, highly differentiated from lower animals in morphologic characteristics, existed in early Quaternary and perhaps in Pliocene times, and here the discovered record ends.

LANGUAGE.

In philology, North America presents the richest field in the world, for here is found the greatest number of languages distributed among the greatest number of stocks. As the progress of research is necessarily from the known to the unknown, civilized languages were studied by scholars before the languages of savage and barbaric tribes. Again, the higher languages are written and are thus immediately accessible. For such reasons, chief attention has been given to the most highly developed languages. The problems presented to the philologist, in the higher languages, cannot be properly solved without a knowledge of the lower forms. The linguist studies a language that he may use it as an instrument for the interchange of thought; the philologist studies a language to use its data in the construction of a philosophy of language. It is in this latter sense that the higher languages are unknown until the lower languages are studied, and it is probable that more light will be thrown upon the former by a study of the latter than by more extended research in the higher.

The vast field of unwritten languages has been explored but not surveyed. In a general way it is known that there are many such languages, and the geographic distribution of the tribes of men who speak them is known, but scholars have just begun the study of the languages.

That the knowledge of the simple and uncompounded must precede the knowledge of the complex and compounded, that the latter may be rightly explained, is an axiom well recognized in biology, and it applies equally well to philology. Hence any system of philology, as the term is here used, made from a survey of the higher languages exclusively, will probably be a failure. "Which of you by taking thought can add one cubit unto his stature," and which of you by taking thought can add the antecedent phenomena necessary to an explanation of the language of Plato or of Spencer?

The study of astronomy, geology, physics, and biology, is in the hands of scientific men; objective methods of research are employed and metaphysic disquisitions find no place in the accepted philosophies;

but to a large extent philology remains in the hands of the metaphysicians, and subjective methods of thought are used in the explanation of the phenomena observed. If philology is to be a science it must have an objective philosophy composed of a homologic classification and orderly arrangement of the phenomena of the languages of the globe.

Philologic research began with the definite purpose in view to discover in the diversities of language among the peoples of the earth a common element from which they were all supposed to have been derived, an original speech, the parent of all languages. In this philologists had great hopes of success at one time, encouraged by the discovery of the relation between the diverse branches of the Aryan stock, but in this very work methods of research were developed and doctrines established by which unexpected results were reached.

Instead of relegating the languages that had before been unclassified to the Aryan family, new families or stocks were discovered, and this process has been carried on from year to year until scores or even hundreds of families are recognized, and until we may reasonably conclude that there was no single primitive speech common to mankind, but that man had multiplied and spread throughout the habitable earth anterior to the development of organized languages; that is, languages have sprung from innumerable sources after the dispersion of mankind.

The progress in language has not been by multiplication, which would be but a progress in degradation under the now well-recognized laws of evolution; but it has been in integration from a vast multiplicity toward a unity. True, all evolution has not been in this direction. There has often been degradation as exhibited in the multiplicity of languages and dialects of the same stock, but evolution has in the aggregate been integration by progress towards unity of speech, and differentiation (which must always be distinguished from multiplication) by specialization of the grammatic process and the development of the parts of speech.

When a people once homogeneous are separated geographically in such a manner that thorough inter-communication is no longer preserved, all of the agencies by which languages change act separately in the distinct communities and produce different changes therein, and dialects are established. If the separation continues, such dialects become distinct languages in the sense that the people of one community are unable to understand the people of another. But such a development of languages is not differentiation in the sense in which this term is here used, and often used in biology, but is analogous to multiplication as understood in biology. The differentiation of an organ is its development for a special purpose, *i. e.*, the organic specialization is concomitant with functional specialization. When paws are differentiated into hands and feet, with the differentiation of the organs, there is a concomitant differentiation in the functions.

When one language becomes two, the same function is performed by each, and is marked by the fundamental characteristic of multiplication, *i. e.*, degradation; for the people originally able to communicate with each other can no longer thus communicate; so that two languages do not serve as valuable a purpose as one. And, further, neither of the two languages has made the progress one would have made, for one would have been developed sufficiently to serve all the purposes of the united peoples in the larger area inhabited by them, and, *cæteris paribus*, the language spoken by many people scattered over a large area must be superior to one spoken by a few people inhabiting a small area.

It would have been strange, indeed, had the primitive assumption in philology been true, and the history of language exhibited universal degradation.

In the remarks on the "Origin of Man," the statement was made that mankind was distributed throughout the habitable earth, in some geological period anterior to the present and anterior to the development of other than the rudest arts. Here, again, we reach the conclusion that man was distributed throughout the earth anterior to the development of organized speech.

In the presence of these two great facts, the difficulty of tracing genetic relationship among human races through arts, customs, institutions, and traditions will appear, for all of these must have been developed after the dispersion of mankind. Analogies and homologies in these phenomena must be accounted for in some other way. Somatology proves the unity of the human species; that is, the evidence upon which this conclusion is reached is morphologic; but in arts, customs, institutions, and traditions abundant corroborative evidence is found. The individuals of the one species, though inhabiting diverse climes, speaking diverse languages, and organized into diverse communities, have progressed in a broad way by the same stages, have had the same arts, customs, institutions, and traditions in the same order, limited only by the degree of progress to which the several tribes have attained, and modified only to a limited extent by variations in environment.

If any ethnic classification of mankind is to be established more fundamental than that based upon language, it must be upon physical characteristics, and such must have been acquired by profound differentiation anterior to the development of languages, arts, customs, institutions, and traditions. The classifications hitherto made on this basis are unsatisfactory, and no one now receives wide acceptance. Perhaps further research will clear up doubtful matters and give an acceptable grouping; or it may be that such research will result only in exhibiting the futility of the effort.

The history of man, from the lowest tribal condition to the highest national organization, has been a history of constant and multifarious admixture of strains of blood; of admixture, absorption, and destruction of languages with general progress toward unity; of the diffusion

of arts by various processes of acculturation; and of admixture and reciprocal diffusion of customs, institutions, and traditions. Arts, customs, institutions, and traditions extend beyond the boundaries of languages and serve to obscure them, and the admixture of strains of blood has obscured primitive ethnic divisions, if such existed.

If the physical classification fails, the most fundamental grouping left is that based on language; but for the reasons already mentioned and others of like character, the classification of languages is not, to the full extent, a classification of peoples.

It may be that the unity of the human race is a fact so profound that all attempts at a fundamental classification to be used in all the departments of anthropology will fail, and that there will remain multifarious groupings for the multifarious purposes of the science; or, otherwise expressed, that languages, arts, customs, institutions, and traditions may be classified, and that the human family will be considered as one race.

MYTHOLOGY.

Here again America presents a rich field for the scientific explorer. It is now known that each linguistic stock has a distinct mythology, and as in some of these stocks there are many languages differing to a greater or less extent, so there are many like differing mythologies.

As in language, so in mythology, investigation has proceeded from the known to the unknown—from the higher to the lower mythologies. In each step of the progress of opinion on this subject a particular phenomenon may be observed. As each lower status of mythology is discovered it is assumed to be the first in origin, the primordial mythology, and all lower but imperfectly understood mythologies are interpreted as degradations, from this assumed original belief; thus polytheism was interpreted as a degeneracy from monotheism; nature worship, from psychotheism; zoölotry, from ancestor worship; and, in order, monotheism has been held to be the original mythology, then polytheism, then physitheism or nature worship, then ancestor worship.

With a large body of mythologists nature worship is now accepted as the primitive religion; and with another body, equally as respectable, ancestor worship is primordial. But nature worship and ancestor worship are concomitant parts of the same religion, and belong to a status of culture highly advanced and characterized by the invention of conventional pictographs. In North America we have scores or even hundreds of systems of mythology, all belonging to a lower state of culture.

Let us hope that American students will not fall into this line of error by assuming that zoötheism is the lowest stage, because this is the status of mythology most widely spread on the continent.

Mythology is primitive philosophy. A mythology—that is, the body

of myths current among any people and believed by them—comprises a system of explanations of all the phenomena of the universe discerned by them; but such explanations are always mixed with much extraneous matter, chiefly incidents in the history of the personages who were the heroes of mythologic deeds.

Every mythology has for its basis a theology—a system of gods who are the actors, and to whom are attributed the phenomena to be explained—for the fundamental postulate in mythology is "some one does it," such being the essential characteristic of subjective reasoning. As peoples pass from one stage of culture to another, the change is made by developing a new sociology with all its institutions, by the development of new arts, by evolution of language, and, in a degree no less, by a change in philosophy; but the old philosophy is not supplanted. The change is made by internal growth and external accretion.

Fragments of the older are found in the newer. This older material in the newer philosophy is often used for curious purposes by many scholars. One such use I wish to mention here. The nomenclature which has survived from the earlier state is supposed to be deeply and occultly symbolic and the mythic narratives to be deeply and occultly allegoric. In this way search is made for some profoundly metaphysic cosmogony; some ancient beginning of the mythology is sought in which mystery is wisdom and wisdom is mystery.

The objective or scientific method of studying a mythology is to collect and collate its phenomena simply as it is stated and understood by the people to whom it belongs. In tracing back the threads of its historical development the student should expect to find it more simple and childlike in every stage of his progress.

It is vain to search for truth in mythologic philosophy, but it is important to search for veritable philosphies, that they may be properly compared and that the products of the human mind in its various stages of culture may be known; important in the reconstruction of the history of philosophy; and important in furnishing necessary data to psychology. No labor can be more fruitless than the search in mythology for true philosophy; and the efforts to build up from the terminology and narratives of mythologies an occult symbolism and system of allegory is but to create a new and fictitious body of mythology.

There is a symbolism inherent in language and found in all philosophy, true or false, and such symbolism was cultivated as an occult art in the early history of civilization when picture-writing developed into conventional writing, and symbolism is an interesting subject for study, but it has been made a beast of burden to carry packs of metaphysic nonsense.

SOCIOLOGY.

Here again North America presents a wide and interesting field to the investigator, for it has within its extent many distinct governments, and these governments, so far as investigations have been carried, are found to belong to a type more primitive than any of the feudalities from which the civilized nations of the earth sprang, as shown by concurrently recorded history.

Yet in this history many facts have been discovered suggesting that feudalities themselves had an origin in something more primitive. In the study of the tribes of the world a multitude of sociologic institutions and customs have been discovered, and in reviewing the history of feudalities it is seen that many of their important elements are survivals from tribal society.

So important are these discoveries that all human history has to be rewritten, the whole philosophy of history reconstructed. Government does not begin in the ascendency of chieftains through prowess in war, but in the slow specialization of executive functions from communal associations based on kinship. Deliberative assemblies do not start in councils gathered by chieftains, but councils precede chieftaincies. Law does not begin in contract, but is the development of custom. Land tenure does not begin in grants from the monarch or the feudal lord, but a system of tenure in common by gentes or tribes is developed into a system of tenure in severalty. Evolution in society has not been from militancy to industrialism, but from organization based on kinship to organization based on property, and alongside of the specializations of the industries of peace the arts of war have been specialized.

So, one by one, the theories of metaphysical writers on sociology are overthrown, and the facts of history are taking their place, and the philosophy of history is being erected out of materials accumulating by objective studies of mankind

PSYCHOLOGY.

Psychology has hitherto been chiefly in the hands of subjective philosophers and is the last branch of anthropology to be treated by scientific methods. But of late years sundry important labors have been performed with the end in view to give this department of philosophy a basis of objective facts; especially the organ of the mind has been studied and the mental operations of animals have been compared with

those of men, and in various other ways the subject is receiving scientific attention.

The new psychology in process of construction will have a threefold basis: A physical basis on phenomena presented by the organ of the mind as shown in man and the lower animals; a linguistic basis as presented in the phenomena of language, which is the instrument of mind; a functional basis as exhibited in operations of the mind.

The phenomena of the third class may be arranged in three subclasses. First, the operations of mind exhibited in individuals in various stages of growth, various degrees of culture, and in various conditions, normal and abnormal; second, the operations of mind as exhibited in technology, arts, and industries; third, the operations of mind as exhibited in philosophy; and these are the explanations given of the phenomena of the universe. On such a basis a scientific pshycology must be erected.

As methods of study are discovered, a vast field opens to the American scholar. Now, as at all times in the history of civilization, there has been no lack of interest in this subject, and no lack of speculative writers; but there is a great want of trained observers and acute investigators.

If we lay aside the mass of worthless matter which has been published, and consider only the material used by the most careful writers, we find on every hand that conclusions are vitiated by a multitude of errors of fact of a character the most simple. Yesterday I read an article on the "Growth of Sculpture," by Grant Allen, that was charming; yet, therein I found this statement:

So far as I know, the Polynesians and many other savages have not progressed beyond the full-face stage of human portraiture above described. Next in rank comes the drawing of a profile, as we find it among the Eskimos and the bushmen. Our own children soon attain to this level, which is one degree higher than that of the full face, as it implies a special point of view, suppresses half the features, and is not diagrammatic or symbolical of all the separate parts. Negroes and North American Indians cannot understand profile; they ask what has become of the other eye.

Perhaps Mr. Allen derives his idea of the inability of the Indians to understand profiles from a statement of Catlin, which I have seen used for this and other purposes by different anthropologists until it seems to have become a *favorite fact.*

Turning to Catlin's *Letters and Notes on the Manners, Customs, and Condition of the North American Indians,* (vol. 2, page 2) we find him saying:

After I had painted these, and many more whom I have not time at present to name, I painted the portrait of a celebrated warrior of the Sioux, by the name of Mah-to-chee-ga (the Little Bear), who was unfortunately slain in a few moments after the picture was done by one of his own tribe; and which was very near costing me my life, for having painted a side view of his face, leaving one-half of it out of the picture,

which had been the cause of the affray; and supposed by the whole tribe to have been intentionally left out by me, as "good for nothing." This was the last picture that I painted amongst the Sioux, and the last, undoubtedly, that I shall ever paint in that place. So tremendous and so alarming was the excitement about it that my brushes were instantly put away, and I embarked the next day on the steamer for the sources of the Missouri, and was glad to get underweigh.

Subsequently, Mr. Catlin elaborates this incident into the "Story of the Dog" (vol. 2, page 188 *et seq*).

Now, whatsoever of truth or of fancy there may be in this story, it cannot be used as evidence that the Indians could not understand or interpret profile pictures, for Mr. Catlin himself gives several plates of Indian pictographs exhibiting profile faces. In my cabinet of pictographs I have hundreds of side views made by Indians of the same tribe of which Mr. Catlin was speaking.

It should never be forgotten that accounts of travelers and other persons who write for the sake of making good stories must be used with the utmost caution. Catlin is only one of a thousand such who can be used with safety only by persons so thoroughly acquainted with the subject that they are able to divide facts actually observed from creations of fancy. But Mr. Catlin must not be held responsible for illogical deductions even from his facts. I know not how Mr. Allen arrived at his conclusion, but I do know that pictographs in profile are found among very many, if not all, the tribes of North America.

Now, for another example. Peschel, in *The Races of Man* (page 151), says:

> The transatlantic history of Spain has no case comparable in iniquity to the act of the Portuguese in Brazil, who deposited the clothes of scarlet-fever or small-pox patients on the hunting grounds of the natives, in order to spread the pestilence among them; and of the North Americans, who used strychnine to poison the wells which the Redskins were in the habit of visiting in the deserts of Utah; of the wives of Australian settlers, who, in times of famine, mixed arsenic with the meal which they gave to starving natives.

In a foot-note on the same page, Burton is given as authority for the statement that the people of the United States poisoned the wells of the redskins.

Referring to Burton, in *The City of the Saints* (page 474), we find him saying:

> The Yuta claim, like the Shoshonee, descent from an ancient people that immigrated into their present seats from the Northwest. During the last thirty years they have considerably decreased, according to the mountaineers, and have been demoralized mentally and physically by the emigrants. Formerly they were friendly, now they are often at war with the intruders. As in Australia, arsenic and corrosive sublimate in springs and provisions have diminished their number.

Now, why did Burton make this statement? In the same volume he describes the Mountain Meadow massacre, and gives the story as related by the actors therein. It is well known that the men who were engaged in this affair tried to shield themselves by diligently publishing that it was a massacre by Indians incensed at the travelers because they had poisoned certain springs at which the Indians were wont to obtain their

supplies of water. When Mr. Burton was in Salt Lake City he, doubtless, heard these stories.

So the falsehoods of a murderer, told to hide his crime, have gone into history as facts characteristic of the people of the United States in their treatment of the Indians. In the paragraph quoted from Burton some other errors occur. The Utes and Shoshonis do not claim to have descended from an ancient people that immigrated into their present seats from the Northwest. Most of these tribes, perhaps all, have myths of their creation in the very regions now inhabited by them.

Again, these Indians have not been demoralized mentally or physically by the emigrants, but have made great progress toward civilization.

The whole account of the Utes and Shoshonis given in this portion of the book is so mixed with error as to be valueless, and bears intrinsic evidence of having been derived from ignorant frontiersmen.

Turning now to the first volume of Spencer's *Principles of Sociology* (page 149), we find him saying:

> And thus prepared, we need feel no surprise on being told that the Zuni Indians require "much facial contortion and bodily gesticulation to make their sentences perfectly intelligible;" that the language of the Bushman needs so many signs to eke out its meaning, that "they are unintelligible in the dark;" and that the Arapahos "can hardly converse with one another in the dark."

When people of different languages meet, especially if they speak languages of different stocks, a means of communication is rapidly established between them, composed partly of signs and partly of oral words, the latter taken from one or both of the languages, but curiously modified so as hardly to be recognized. Such conventional languages are usually called "jargons," and their existence is rather brief.

When people communicate with each other in this manner, oral speech is greatly assisted by sign-language, and it is true that darkness impedes their communication. The great body of frontiersmen in America who associate more or less with the Indians depend upon jargon methods of communication with them; and so we find that various writers and travelers describe Indian tongues by the characteristics of this jargon speech. Mr. Spencer usually does.

The Zuni and the Arapaho Indians have a language with a complex grammar and copious vocabulary well adapted to the expression of the thoughts incident to their customs and status of culture, and they have no more difficulty in conveying their thoughts with their language by night than Englishmen have in conversing without gaslight. An example from each of three eminent authors has been taken to illustrate the worthlessness of a vast body of anthropologic material to which even the best writers resort.

Anthropology needs trained devotees with philosophic methods and keen observation to study every tribe and nation of the globe almost *de novo;* and from materials thus collected a science may be established.

SMITHSONIAN INSTITUTION—BUREAU OF ETHNOLOGY.
J. W. POWELL, DIRECTOR.

A FURTHER CONTRIBUTION TO THE STUDY OF THE MORTUARY CUSTOMS OF THE NORTH AMERICAN INDIANS.

BY

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A FURTHER CONTRIBUTION

TO THE

STUDY OF THE MORTUARY CUSTOMS OF THE NORTH AMERICAN INDIANS.

By H. C. Yarrow.

INTRODUCTORY.

In view of the fact that the present paper will doubtless reach many readers who may not, in consequence of the limited edition, have seen the preliminary volume on mortuary customs, it seems expedient to reproduce in great part the prefatory remarks which served as an introduction to that work; for the reasons then urged, for the immediate study of this subject, still exist, and as time flies on become more and more important.

The primitive manners and customs of the North American Indians are rapidly passing away under influences of civilization and other disturbing elements. In view of this fact, it becomes the duty of all interested in preserving a record of these customs to labor assiduously, while there is still time, to collect such data as may be obtainable. This seems the more important now, as within the last ten years an almost universal interest has been awakened in ethnologic research, and the desire for more knowledge in this regard is constantly increasing. A wise and liberal government, recognizing the need, has ably seconded the efforts of those engaged in such studies by liberal grants from the public funds; nor is encouragement wanted from the hundreds of scientific societies throughout the civilized globe. The public press, too—the mouth-piece of the people—is ever on the alert to scatter broadcast such items of ethnologic information as its corps of well-trained reporters can secure. To induce further laudable inquiry, and assist all those who may be willing to engage in the good work, is the object of this further paper on the mortuary customs of North American Indians, and it is hoped that many more laborers may through it be added to the extensive and honorable list of those who have already contributed.

It would appear that the subject chosen should awaken great interest, since the peculiar methods followed by different nations and the great importance attached to burial ceremonies have formed an almost invariable part of all works relating to the different peoples of our globe; in fact, no particular portion of ethnologic research has claimed more attention. In view of these facts, it might seem almost a work of super-

erogation to continue a further examination of the subject, for nearly every author in writing of our Indian tribes makes some mention of burial observances; but these notices are scattered far and wide on the sea of this special literature, and many of the accounts, unless supported by corroborative evidence, may be considered as entirely unreliable. To bring together and harmonize conflicting statements, and arrange collectively what is known of the subject, has been the writer's task, and an enormous mass of information has been acquired, the method of securing which has been already described in the preceding volume and need not be repeated at this time. It has seemed undesirable at present to enter into any discussion regarding the causes which may have led to the adoption of any particular form of burial or coincident ceremonies, the object of this paper being simply to furnish illustrative examples, and request further contributions from observers; for, notwithstanding the large amount of material already at hand, much still remains to be done, and careful study is needed before any attempt at a thorough analysis of mortuary customs can be made. It is owing to these facts and from the nature of the material gathered that the paper must be considered more as a compilation than an original effort, the writer having done little else than supply the thread to bind together the accounts furnished.

It is proper to add that all the material obtained will eventually be embodied in a quarto volume, forming one of the series of Contributions to North American Ethnology prepared under the direction of Maj. J. W. Powell, Director of the Bureau of Ethnology, Smithsonian Institution, from whom, since the inception of the work, most constant encouragement and advice has been received, and to whom all American ethnologists owe a debt of gratitude which can never be repaid.

Having thus called attention to the work, the classification of the subject may be given, and examples furnished of the burial ceremonies among different tribes, calling especial attention to similar or almost analogous customs among the peoples of the Old World.

For our present purpose the following provisional arrangement of burials may be adopted, although further study may lead to some modifications.

CLASSIFICATION OF BURIAL.

1st. By INHUMATION in pits, graves, or holes in the ground, stone graves or cists, in mounds, beneath or in cabins, wigwams, houses or lodges, or in caves.

2d. By EMBALMMENT or a process of mummifying, the remains being afterwards placed in the earth, caves, mounds, boxes on scaffolds, or in charnel-houses.

3d. By DEPOSITION of remains in urns.

4th. By SURFACE BURIAL, the remains being placed in hollow trees or logs, pens, or simply covered with earth, or bark, or rocks forming cairns.

5th. By CREMATION, or partial burning, generally on the surface of the earth, occasionally beneath, the resulting bones or ashes being placed in pits in the ground, in boxes placed on scaffolds or trees, in urns, sometimes scattered.

6th. By AERIAL SEPULTURE, the bodies being left in lodges, houses, cabins, tents, deposited on scaffolds or trees, in boxes or canoes, the two latter receptacles supported on scaffolds or posts, or placed on the ground. Occasionally baskets have been used to contain the remains of children, these being hung to trees.

7th. By AQUATIC BURIAL, beneath the water, or in canoes, which were turned adrift.

These heads might, perhaps, be further subdivided, but the above seem sufficient for all practical needs.

The use of the term *burial* throughout this paper is to be understood in its literal significance, the word being derived from the Teutonic Anglo-Saxon "*birgan*," to conceal or hide away.

In giving descriptions of different burials and attendant ceremonies, it has been deemed expedient to introduce entire accounts as furnished, in order to preserve continuity of narrative, and in no case has the relator's language been changed except to correct manifest unintentional errors of spelling.

INHUMATION.

PIT BURIAL.

The commonest mode of burial among North American Indians has been that of interment in the ground, and this has taken place in a number of different ways; the following will, however, serve as good examples of the process:

One of the simplest forms is thus noted by Schoolcraft:*

The Mohawks of New York made a large round hole in which the body was placed upright or upon its haunches, after which it was covered with timber, to support the earth which they lay over, and thereby kept the body from being pressed. They then raised the earth in a round hill over it. They always dressed the corpse in all its finery, and put wampum and other things into the grave with it; and the relations suffered not grass nor any weed to grow upon the grave, and frequently visited it and made lamentation.

In Jones† is the following interesting account from Lawson‡ of the burial customs of the Indians formerly inhabiting the Carolinas:

Among the Carolina tribes the burial of the dead was accompanied with special ceremonies, the expense and formality attendant upon the funeral according with the rank of the deceased. The corpse was first placed in a cane hurdle and deposited in

* Hist. Ind. Tribes of U. S., 1853, pt. 3, p. 193.

† Antiq. of Southern Indians, 1873, pp. 108–110. ‡ Hist. of Carolina, 1714, p. 181.

an outhouse made for the purpose, where it was suffered to remain for a day and a night, guarded and mourned over by the nearest relatives with disheveled hair. Those who are to officiate at the funeral go into the town, and from the backs of the first young men they meet strip such blankets and matchcoats as they deem suitable for their purpose. In these the dead body is wrapped and then covered with two or three mats made of rushes or cane. The coffin is made of woven reeds or hollow canes tied fast at both ends. When everything is prepared for the interment, the corpse is carried from the house in which it has been lying into the orchard of peach-trees and is there deposited in another hurdle. Seated upon mats are there congregated the family and tribe of the deceased and invited guests. The medicine man, or conjurer, having enjoined silence, then pronounces a funeral oration, during which he recounts the exploits of the deceased, his valor, skill, love of country, property, and influence; alludes to the void caused by his death, and counsels those who remain to supply his place by following in his footsteps; pictures the happiness he will enjoy in the land of spirits to which he has gone, and concludes his address by an allusion to the prominent traditions of his tribe.

Let us here pause to remind the reader that this custom has prevailed throughout the civilized world up to the present day—a custom, in the opinion of many, "more honored in the breach than in the observance."

At last [says Mr. Lawson], the Corpse is brought away from that Hurdle to the Grave by four young Men, attended by the Relations, the King, old Men, and all the Nation. When they come to the Sepulcre, which is about six foot deep and eight foot long, having at each end (that is, at the Head and Foot) a Light-Wood or Pitch-Pine Fork driven close down the sides of the Grave firmly into the Ground (these two Forks are to contain a Ridge-Pole, as you shall understand presently), before they lay the Corps into the Grave, they cover the bottom two or three time over with the Bark of Trees; then they let down the Corps (with two Belts that the *Indians* carry their Burdens withal) very leisurely upon the said Barks; then they lay over a Pole of the same Wood in the two Forks, and having a great many Pieces of Pitch-Pine Logs about two Foot and a half long, they stick them in the sides of the Grave down each End and near the Top thereof, where the other Ends lie in the Ridge-Pole, so that they are declining like the Roof of a House. These being very thick plac'd, they cover them [many times double] with Bark; then they throw the Earth thereon that came out of the Grave and beat it down very firm. By this Means the dead Body lies in a Vault, nothing touching him.

After a time the body is taken up, the bones cleaned, and deposited in an ossuary called the Quiogozon.

Figure 1, after De Bry and Lafitau, represents what the early writers called the Quiogozon, or charnel-house, and allusions will be found to it in other parts of this volume. Discrepancies in these accounts impair greatly their value, for one author says that bones were deposited, another dried bodies.

It will be seen from the following account, furnished by M. B. Kent, relating to the Sacs and Foxes (*Oh-sah-ke-uck*) of the Nehema Agency, Nebraska, that these Indians were careful in burying their dead to prevent the earth coming in contact with the body, and this custom has been followed by a number of different tribes, as will be seen by examples given further on.

Ancient burial.—The body was buried in a grave made about 2½ feet deep, and was laid always with the head towards the east, the burial taking place as soon after death as possible. The grave was prepared by putting bark in the bottom of it before the corpse

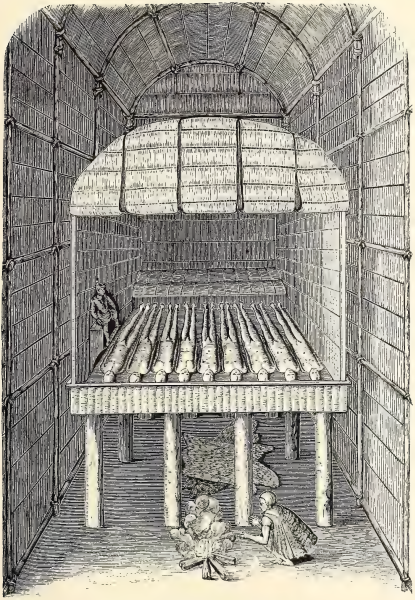

Fig. 1.—Quiogozon or Dead House.

was deposited, a plank covering made and secured some distance above the body. The plank was made by splitting trees, until intercourse with the whites enabled them to obtain sawed lumber. The corpse was always enveloped in a blanket, and prepared as for a long journey in life, no coffin being used.

Modern burial.—This tribe now usually bury in coffins, rude ones constructed by themselves, still depositing the body in the grave with the head towards the east.

Ancient funeral ceremonies.—Every relative of the deceased had to throw some article in the grave, either food, clothing, or other material. There was no rule stating the nature of what was to be added to the collection, simply a requirement that something must be deposited, if it were only a piece of soiled and faded calico. After the corpse was lowered into the grave some brave addressed the dead, instructing him to walk directly westward, that he would soon discover moccasin tracks, which he must follow until he came to a great river, which is the river of death; when there he would find a pole across the river, which, if he has been honest, upright, and good, will be straight, upon which he could readily cross to the other side; but if his life had been one of wickedness and sin, the pole would be very crooked, and in the attempt to cross upon it he would be precipitated into the turbulent stream and lost forever. The brave also told him if he crossed the river in safety the Great Father would receive him, take out his old brains, give him new ones, and then he would have reached the happy hunting grounds, always be happy and have eternal life. After burial a feast was always called, and a portion of the food of which each and every relative was partaking was burned to furnish subsistence to the spirit upon its journey.

Modern funeral ceremonies.—Provisions are rarely put into the grave, and no portion of what is prepared for the feast subsequent to burial is burned, although the feast is continued. All the address delivered by the brave over the corpse after being deposited in the grave is omited. A prominent feature of all ceremonies, either funeral or religious, consists of feasting accompanied with music and dancing.

Ancient mourning observances.—The female relations allowed their hair to hang entirely unrestrained, clothed themselves in the most unpresentable attire, the latter of which the males also do. Men blacked the whole face for a period of ten days after a death in the family, while the women blacked only the cheeks; the faces of the children were blacked for three months; they were also required to fast for the same length of time, the fasting to consist of eating but one meal per day, to be made entirely of hominy, and partaken of about sunset. It was believed that this fasting would enable the child to dream of coming events and prophesy what was to happen in the future. The extent and correctness of prophetic vision depended upon how faithfully the ordeal of fasting had been observed.

Modern mourning observances.—Many of these of the past are continued, such as wearing the hair unrestrained, wearing uncouth apparel, blacking faces, and fasting of children, and they are adhered to with as much tenacity as many of the professing Christians belonging to the evangelical churches adhere to their practices, which constitute mere forms, the intrinsic value of which can very reasonably be called in question.

The Creeks and Seminoles of Florida, according to Schoolcraft,* made the graves of their dead as follows:

When one of the family dies, the relatives bury the corpse about four feet deep in a round hole dug directly under the cabin or rock wherever he died. The corpse is placed in the hole in a sitting posture, with a blanket wrapped about it, and the legs bent under and tied together. If a warrior, he is painted, and his pipe, ornaments, and warlike appendages are deposited with him. The grave is then covered with canes tied to a hoop round the top of the hole, then a firm layer of clay, sufficient to support the weight of a man. The relations howl loudly and mourn publicly for four day. If the deceased has been a man of eminent character, the family immediately remove

*Hist. Ind. Tribes of U. S., 1855, pt. 5, p. 270.

diately remove from the house in which he is buried and erect a new one, with a belief that where the bones of their dead are deposited the place is always attended by goblins and chimeras dire.

Dr. W. C. Boteler, physician to the Otoe Indian Agency, Gage County, Nebraska, in a personal communication to the writer, furnishes a most interesting account of the burial ceremonies of this tribe, in which it may be seen that graves are prepared in a manner similar to those already mentioned:

The Otoe and Missouri tribes of Indians are now located in southern Gage County, Nebraska, on a reservation of 43,000 acres, unsurpassed in beauty of location, natural resources, and adaptability for prosperous agriculture. This pastoral people, though in the midst of civilization, have departed but little from the rude practice and customs of a nomadic life, and here may be seen and studied those interesting dramas as vividly and satisfactorily as upon the remote frontier.

During my residence among this people on different occasions, I have had the opportunity of witnessing the Indian burials and many quaint ceremonies pertaining thereto.

When it is found that the vital spark is wavering in an Otoe subject, the preparation of the burial costume is immediately begun. The near relatives of the dying Indian surround the humble bedside, and by loud lamentations and much weeping manifest a grief which is truly commensurate with the intensity of Indian devotion and attachment.

While thus expressing before the near departed their grief at the sad separation impending, the Indian women, or friendly braves, lose no time in equipping him or her with the most ornate clothes and ornaments that are available or in immediate possession. It is thus that the departed Otoe is enrobed in death, in articles of his own selection and by arrangements of his own taste and dictated by his own tongue. It is customary for the dying Indian to dictate, ere his departure, the propriety or impropriety of the accustomed sacrifices. In some cases there is a double and in others no sacrifice at all. The Indian women then prepare to cut away their hair; it is accomplished with scissors, cutting close to the scalp at the side and behind.

The preparation of the dead for burial is conducted with great solemnity and care. Bead-work the most ornate, expensive blankets and ribbons comprise the funeral shroud. The dead, being thus enrobed, is placed in a recumbent posture at the most conspicuous part of the lodge and viewed in rotation by the mourning relatives previously summoned by a courier, all preserving uniformity in the piercing screams which would seem to have been learned by rote.

An apparent service is then conducted. The aged men of the tribe, arranged in a circle, chant a peculiar funeral dirge around one of their number, keeping time upon a drum or some rude cooking-utensil.

At irregular intervals an aged relative will arise and dance excitedly around the central person, vociferating, and with wild gesture, tomahawk in hand, imprecate the evil spirit, which he drives to the land where the sun goes down. The evil spirit being thus effectually banished, the mourning gradually subsides, blending into succeeding scenes of feasting and refreshment. The burial feast is in every respect equal in richness to its accompanying ceremonies. All who assemble are supplied with cooked venison, hog, buffalo, or beef, regular waiters distributing alike hot cakes soaked in grease and coffee or water, as the case may be.

Frequently during this stage of the ceremony the most aged Indian present will sit in the central circle, and in a continuous and doleful tone narrate the acts of valor in the life of the departed, enjoining fortitude and bravery upon all sitting around as an essential qualification for admittance to the land where the Great Spirit reigns. When the burial feast is well-nigh completed, it is customary for the surviving friends to

present the bereaved family with useful articles of domestic needs, such as calico in bolt, flannel cloth, robes, and not unfrequently ponies or horses. After the conclusion of the ceremonies at the lodge, the body is carefully placed in a wagon and, with an escort of all friends, relatives, and acquaintances, conveyed to the grave previously prepared by some near relation or friend. When a wagon is used, the immediate relatives occupy it with the corpse, which is propped in a semi-sitting posture; before the use of wagons among the Otoes, it was necessary to bind the body of the deceased upon a horse and then convey him to his last resting place among his friends. In past days when buffalo were more available, and a tribal hunt was more frequently indulged in, it is said that those dying on the way were bound upon horses and thus frequently carried several hundred miles for interment at the burial places of their friends.

At the graveyard of the Indians the ceremony partakes of a double nature; upon the one hand it is sanguinary and cruel, and upon the other blended with the deepest grief and most heartfelt sorrow. Before the interment of the dead the chattels of the deceased are unloaded from the wagons or unpacked from the backs of ponies and carefully arranged in the vault-like tomb. The bottom, which is wider than the top (graves here being dug like an inverted funnel), is spread with straw or grass matting, woven generally by the Indian women of the tribe or some near neighbor. The sides are then carefully hung with handsome shawls or blankets, and trunks, with domestic articles, pottery, &c., of less importance, are piled around in abundance. The sacrifices are next inaugurated. A pony, first designated by the dying Indian, is led aside and strangled by men hanging to either end of a rope. Sometimes, but not always, a dog is likewise strangled, the heads of both animals being subsequently laid upon the Indian's grave. The body, which is now often placed in a plain coffin, is lowered into the grave, and if a coffin is used the friends take their parting look at the deceased before closing it at the grave. After lowering, a saddle and bridle, blankets, dishes, &c., are placed upon it, the mourning ceases, and the Indians prepare to close the grave. It should be remembered, among the Otoe and Missouri Indians dirt is not filled in upon the body, but simply rounded up from the surface upon stout logs that are accurately fitted over the opening of the grave. After the burying is completed, a distribution of the property of the deceased takes place, the near relatives receiving everything, from the merest trifle to the tent and horses, leaving the immediate family, wife and children or father out-door pensioners.

Although the same generosity is not observed towards the whites assisting in funeral rites, it is universally practiced as regards Indians, and poverty's lot is borne by the survivors with a fortitude and resignation which in them amounts to duty, and marks a higher grade of intrinsic worth than pervades whites of like advantages and conditions. We are told in the Old Testament Scriptures, "four days and four nights should the fires burn," &c. In fulfillment of this sacred injunction, we find the midnight vigil carefully kept by these Indians four days and four nights at the graves of their departed. A small fire is kindled for the purpose near the grave at sunset, where the nearest relatives convene and maintain a continuous lamentation till the morning dawn. There was an ancient tradition that at the expiration of this time the Indian arose, and mounting his spirit pony, galloped off to the happy hunting-ground beyond.

Happily, with the advancement of Christianity these superstitions have faded, and the living sacrifices are partially continued only from a belief that by parting with their most cherished and valuable goods they propitiate the Great Spirit for the sins committed during the life of the deceased. This, though at first revolting, we find was the practice of our own forefathers, offering up as burnt offerings the lamb or the ox; hence we cannot censure this people, but, from a comparison of conditions, credit them with a more strict observance of our Holy Book than pride and seductive fashions permit of us.

From a careful review of the whole of their attendant ceremonies a remarkable similarity can be marked. The arrangement of the corpse preparatory to interment, the funeral feast, the local service by the aged fathers, are all observances that have been noted among whites, extending into times that are in the memory of those still living.

The Pimas of Arizona, actuated by apparently the same motives that led the more eastern tribes to endeavor to prevent contact of earth with the corpse, adopted a plan which has been described by Capt. F. E. Grossman,* and the account is corroborated by M. Alphonse Pinart† and Bancroft.‡

Captain Grossman's account follows:

The Pimas tie the bodies of their dead with ropes, passing the latter around their neck and under the knees, and then drawing them tight until the body is doubled up and forced into a sitting position. They dig the graves from four to five feet deep and perfectly round (about two feet in diameter), and then hollow out to one side of the bottom of this grave a sort of vault large enough to contain the body. Here the body is deposited, the grave is filled up level with the ground, and poles, trees, or pieces of timber placed upon the grave to protect the remains from coyotes.

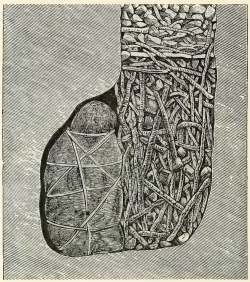

FIG. 2.—Pima burial.

Burials usually take place at night without much ceremony. The mourners chant during the burial, but signs of grief are rare. The bodies of their dead are buried, if possible, immediately after death has taken place; and the graves are generally prepared before the patients die. Sometimes sick persons (for whom the graves had already been dug) recover. In such cases the graves are left open until the persons for whom they are intended die. Open graves of this kind can be seen in several of their burial grounds. Places of burial are selected some distance from the village, and, if possible, in a grove of mesquite trees.

Immediately after the remains have been buried, the house and personal effects of the deceased are burned, and his horses and cattle killed, the meat being cooked as a

* Rep. Smithsonian Institution, 1871, p. 407.

† Voy. dans l'Arizona, in Bull. Soc. de Géographie, 1877.

‡ Nat. Races Pacif. States 1874, vol. 1, p. 555.

repast for the mourners. The nearest relatives of the deceased as a sign of their sorrow remain within their village for weeks, and sometimes months; the men cut off about six inches of their long hair, while the women cut their hair quite short. * * *

The custom of destroying all the property of the husband when he dies impoverishes the widow and children and prevents increase of stock. The women of the tribe, well aware that they will be poor should their husbands die, and that then they will have to provide for their children by their own exertions, do not care to have many children, and infanticide, both before and after birth, prevails to a great extent. This is not considered a crime, and old women of the tribe practice it. A widow may marry again after a year's mourning for her first husband; but having children no man will take her for a wife and thus burden himself with her children. Widows generally cultivate a small piece of ground, and friends and relatives (men) plow the ground for them.

Fig 2, drawn from Captain Grossman's description by my friend Dr. W. J. Hoffman, will convey a good idea of this mode of burial.

Stephen Powers* describes a similar mode of grave preparation among the Yuki of California:

The Yuki bury their dead in a sitting posture. They dig a hole six feet deep sometimes, and at the bottom of it "*coyote*" under, making a little recess in which the corpse is deposited.

The Comanches of Indian Territory (*Nem, we, or us, people*), according to Dr. Fordyce Grinnell, of the Wichita Agency, Indian Territory, go to the opposite extreme, so far as the protection of the dead from the surrounding earth is concerned. The account as received is given entire, as much to illustrate this point as others of interest.

When a Comanche is dying, while the death-rattle may yet be faintly heard in the throat, and the natural warmth has not departed from the body, the knees are strongly bent upon the chest, and the legs flexed upon the thighs. The arms are also flexed upon each side of the chest, and the head bent forward upon the knees. A lariat, or rope, is now used to firmly bind the limbs and body in this position. A blanket is then wrapped around the body, and this again tightly corded, so that the appearance when ready for burial is that of an almost round and compact body, very unlike the composed pall of his Wichita or Caddo brother. The body is then taken and placed in a saddle upon a pony, in a sitting posture; a squaw usually riding behind, though sometimes one on either side of the horse, holds the body in position until the place of burial is reached, when the corpse is literally tumbled into the excavation selected for the purpose. The deceased is only accompanied by two or three squaws, or enough to perform the little labor bestowed upon the burial. The body is taken due west of the lodge or village of the bereaved, and usually one of the deep washes or heads of cañons in which the Comanche country abounds is selected, and the body thrown in, without special reference to position. With this are deposited the bows and arrows; these, however, are first broken. The saddle is also placed in the grave, together with many of the personal valuables of the departed. The body is then covered over with sticks and earth, and sometimes stones are placed over the whole.

Funeral ceremonies.—The best pony owned by the deceased is brought to the grave and killed, that the departed may appear well mounted and caparisoned among his fellows in the other world. Formerly, if the deceased were a chief or man of consequence and had large herds of ponies, many were killed, sometimes amounting to 200 or 300 head in number.

The Comanches illustrate the importance of providing a good pony for the convoy

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*Cont. to N. A. Ethnol., 1877, vol. iii, p. 133.

of the deceased to the happy-grounds by the following story, which is current among both Comanches and Wichitas:

"A few years since, an old Comanche died who had no relatives and who was quite poor. Some of the tribe concluded that almost any kind of a pony would serve to transport him to the next world. They therefore killed at his grave an old, ill-conditioned, lop-eared horse. But a few weeks after the burial of this friendless one, lo and behold he returned, riding this same old worn-out horse, weary and hungry. He first appeared at the Wichita camps, where he was well known, and asked for something to eat, but his strange appearance, with sunken eyes and hollow cheeks, filled with consternation all who saw him, and they fled from his presence. Finally one bolder than the rest placed a piece of meat on the end of a lodge-pole and extended it to him. He soon appeared at his own camp, creating, if possible, even more dismay than among the Wichitas, and this resulted in both Wichitas and Comanches leaving their villages and moving *en masse* to a place on Rush Creek, not far distant from the present site of Fort Sill.

"When the troubled spirit from the sunsetting world was questioned why he thus appeared among the inhabitants of earth, he made reply that when he came to the gates of paradise the keepers would on no account permit him to enter upon such an ill-conditioned beast as that which bore him, and thus in sadness he returned to haunt the homes of those whose stinginess and greed permitted him no better equipment. Since this no Comanche has been permitted to depart with the sun to his chambers in the west without a steed which in appearance should do honor alike to the rider and his friends."

The body is buried at the sunsetting side of the camp, that the spirit may accompany the setting sun to the world beyond. The spirit starts on its journey the following night after death has taken place; if this occur at night, the journey is not begun until the next night.

Mourning observances.—All the effects of the deceased, the tents, blankets, clothes, treasures, and whatever of value, aside from the articles which have been buried with the body, are burned, so that the family is left in poverty. This practice has extended even to the burning of wagons and harness since some of the civilized habits have been adopted. It is believed that these ascend to heaven in the smoke, and will thus be of service to the owner in the other world. Immediately upon the death of a member of the household, the relatives begin a peculiar wailing, and the immediate members of the family take off their customary apparel and clothe themselves in rags and cut themselves across the arms, breast, and other portions of the body, until sometimes a fond wife or mother faints from loss of blood. This scarification is usually accomplished with a knife, or, as in earlier days, with a flint. Hired mourners are employed at times who are in no way related to the family, but who are accomplished in the art of crying for the dead. These are invariably women. Those nearly related to the departed, cut-off the long locks from the entire head, while those more distantly related, or special friends, cut the hair only from one side of the head. In case of the death of a chief, the young warriors also cut the hair, usually from the left side of the head.

After the first few days of continued grief, the mourning is conducted more especially at sunrise and sunset, as the Comanches venerate the sun; and the mourning at these seasons is kept up, if the death occurred in summer, until the leaves fall, or, if in the winter, until they reappear.

It is a matter of some interest to note that the preparation of the corpse and the grave among the Comanches is almost identical with the burial customs of some of the African tribes, and the baling of the body with ropes or cords is a wide and common usage of savage peoples. The hiring of mourners is also a practice which has been very prevalent from remotest periods of time.

GRAVE BURIAL.

The following interesting account of burial among the Pueblo Indians of San Geronimo de Taos, New Mexico, furnished by Judge Anthony Joseph, will show in a manner how civilized customs have become engrafted upon those of a more barbaric nature. It should be remembered that the Pueblo people are next to the Cherokees, Choctaws, and others in the Indian Territory, the most civilized of our tribes.

According to Judge Joseph, these people call themselves *Wee-ka-nahs.*

These are commonly known to the whites as *Piros.* The manner of burial by these Indians, both ancient and modern, as far as I can ascertain from information obtained from the most intelligent of the tribe, is that the body of the dead is and has been always buried in the ground in a horizontal position with the flat bottom of the grave. The grave is generally dug out of the ground in the usual and ordinary manner, being about 6 feet deep, 7 feet long, and about 2 feet wide. It is generally finished after receiving its occupant by being leveled with the hard ground around it, never leaving, as is customary with the whites, a mound to mark the spot. This tribe of Pueblo Indians never cremated their dead, as they do not know, even by tradition, that it was ever done or attempted. There are no utensils or implements placed in the grave, but there are a great many Indian ornaments, such as beads of all colors, sea-shells, hawk-bells, round looking-glasses, and a profusion of ribbons of all imaginable colors; then they paint the body with red vermilion and white chalk, giving it a most fantastic as well as ludicrous appearance. They also place a variety of food in the grave as a wise provision for its long journey to the happy hunting-ground beyond the clouds.

The funeral ceremonies of this tribe are very peculiar. First, after death, the body is laid out on a fancy buffalo robe spread out on the ground, then they dress the body in the best possible manner in their style of dress; if a male, they put on his beaded leggins and embroidered *saco,* and his fancy dancing-moccasins, and his large brass or shell ear-rings; if a female, they put on her best manta or dress, tied around the waist with a silk sash, put on her feet her fancy dancing-moccasins; her *rosario* around her neck, her brass or shell ear-rings in her ears, and with her tressed black hair tied up with red tape or ribbon, this completes her wardrobe for her long and happy chase. When they get through dressing the body, they place about a dozen lighted candles around it, and keep them burning continually until the body is buried. As soon as the candles are lighted, the *veloris,* or wake, commences; the body lies in state for about twenty-four hours, and in that time all the friends, relatives, and neighbors of the deceased or "*difunti*" visit the wake, chant, sing, and pray for the soul of the same, and tell one another of the good deeds and traits of valor and courage manifested by the deceased during his earthly career, and at intervals in their praying, singing, &c., some near relative of the deceased will step up to the corpse and every person in the room commences to cry bitterly and express aloud words of endearment to the deceased and of condolence to the family of the same in their untimely bereavement.

At about midnight supper is announced, and every person in attendance marches out into another room and partakes of a frugal Indian meal, generally composed of wild game; Chilé colorado or red-pepper tortillas, and guayaves, with a good supply of mush and milk, which completes the festive board of the *veloris* or wake. When the deceased is in good circumstances, the crowd in attendance is treated every little while during the wake to alcoholic refreshments. This feast and feasting is kept up until the Catholic priest arrives to perform the funeral rites.

When the priest arrives, the corpse is done up or rather baled up in a large and well-tanned buffalo robe, and tied around tight with a rope or lasso made for the purpose; then six or eight men act as pall-bearers, conducting the body to the place of burial, which is in front of their church or chapel. The priest conducts the funeral ceremonies in the ordinary and usual way of mortuary proceedings observed by the Catholic church all over the world. While the grave-diggers are filling up the grave, the friends, relatives, neighbors, and, in fact, all persons that attend the funeral, give vent to their sad feelings by making the whole pueblo howl; after the tremendous uproar subsides, they disband and leave the body to rest until Gabriel blows his trumpet. When the ceremonies are performed with all the pomp of the Catholic church, the priest receives a fair compensation for his services; otherwise he officiates for the yearly rents that all the Indians of the pueblo pay him, which amount in the sum total to about $2,000 per annum.

These Pueblo Indians are very strict in their mourning observance, which last for one year after the demise of the deceased. While in mourning for the dead, the mourners do not participate in the national festivities of the tribe, which are occasions of state with them, but they retire into a state of sublime quietude which makes more civilized people sad to observe; but when the term of mourning ceases, at the end of the year, they have high mass said for the benefit of the soul of the departed; after this they again appear upon the arena of their wild sports and continue to be gay and happy until the next mortal is called from this terrestrial sphere to the happy hunting-ground, which is their pictured celestial paradise. The above cited facts, which are the most interesting points connected with the burial customs of the Indians of the pueblo San Geronimo de Taos, are not in the least exaggerated, but are the absolute facts, which I have witnessed myself in many instances for a period of more than twenty years that I have resided but a short distance from said pueblo, and, being a close observer of their peculiar burial customs, am able to give you this true and undisguised information relative to your circular on "burial customs."

Another example of the care which is taken to prevent the earth coming in contact with the corpse may be found in the account of the burial of the Wichita Indians of Indian Territory, furnished by Dr. Fordyce Grinnell, whose name has already been mentioned in connection with the Comanche customs. The Wichitas call themselves *Kitty-ka-tats*, or those of the tattooed eyelids.

When a Wichita dies the town-crier goes up and down through the village and announces the fact. Preparations are immediately made for the burial, and the body is taken without delay to the grave prepared for its reception. If the grave is some distance from the village, the body is carried thither on the back of a pony, being first wrapped in blankets and then laid prone across the saddle, one person walking on either side to support it. The grave is dug from three to four feet deep and of sufficient length for the extended body. First blankets and buffalo-robes are laid in the bottom of the grave, then the body, being taken from the horse and unwrapped, is dressed in its best apparel and with ornaments is placed upon a couch of blankets and robes, with the head towards the west and the feet to the east; the valuables belonging to the deceased are placed with the body in the grave. With the man are deposited his bows and arrows or gun, and with the woman her cooking utensils and other implements of her toil. Over the body sticks are placed six or eight inches deep and grass over these, so that when the earth is filled in, it need not come in contact with the body or its trappings. After the grave is filled with earth, a pen of poles is built around it, or, as is frequently the case, stakes are driven so that they cross each other from either side about midway over the grave, thus forming a complete protection from the invasion of wild animals. After all this is done, the grass of other *debris* is carefully scraped from about the grave for several feet, so that the ground is left smooth and clean. It is seldom the case that the relatives accompany

the remains to the grave, but they more often employ others to bury the body for them, usually women. Mourning is similar in this tribe as in others, and it consists in cutting off the hair, fasting, &c. Horses are also killed at the grave.

The Caddoes, *Ascena*, or Timber Indians, as they call themselves, follow nearly the same mode of burial as the Wichitas. but one custom prevailing is worthy of mention:

If a Caddo is killed in battle, the body is never buried, but is left to be devoured by beasts or birds of prey, and the condition of such individuals in the other world is considered to be far better than that of persons dying a natural death.

In a work by Bruhier* the following remarks, freely translated by the writer, may be found, which note a custom having great similarity to the exposure of bodies to wild beasts mentioned above:

The ancient Persians threw out the bodies of their dead on the roads, and if they were promptly devoured by wild beasts it was esteemed a great honor, a misfortune if not. Sometimes they interred, always wrapping the dead in a wax cloth to prevent odor.

M. Pierre Muret,† from whose book Bruhier probably obtained his information, gives at considerable length an account of this peculiar method of treating the dead among the Persians, as follows:

It is a matter of astonishment, considering the *Persians* have ever had the renown of being one of the most civilized Nations in the world, that notwithstanding they should have used such barbarous customs about the Dead as are set down in the Writings of some Historians; and the rather because at this day there are still to be seen among them those remains of Antiquity, which do fully satisfie us, that their Tombs have been very magnificent. And yet nevertheless, if we will give credit to *Procopius* and *Agathias*, the *Persians* were never wont to bury their Dead Bodies, so far were they from bestowing any Funeral Honours upon them: But, as these Authors tell us, they exposed them stark naked in the open fields, which is the greatest shame our Laws do allot to the most infamous Criminals, by laying them open to the view of all upon the highways: Yea, in their opinion it was a great unhappiness, if either Birds or Beasts did not devour their Carcases; and they commonly made an estimate of the Felicity of these poor Bodies, according as they were sooner or later made a prey of. Concerning these, they resolved that they must needs have been very bad indeed, since even the beasts themselves would not touch them; which caused an extream sorrow to their Relations, they taking it for an ill boding to their Family, and an infallible presage of some great misfortune hanging over their heads; for they persuaded themselves, that the Souls which inhabited those Bodies being dragg'd into Hell, would not fail to come and trouble them; and that being always accompanied with the Devils, their Tormentors, they would certainly give them a great deal of disturbance.

And on the contrary, when these Corpses were presently devoured, their joy was very great, they enlarged themselves in praises of the Deceased; every one esteeming them undoubtedly happy, and came to congratulate their relations on that account: For as they believed assuredly, that they were entered into the *Elysian* Fields, so they were persuaded, that they would procure the same bliss for all those of their family.

They also took a great delight to see Skeletons and Bones scatered up and down in the fields, whereas we can scarcely endure to see those of Horses and Dogs used so. And these remains of Humane Bodies, (the sight whereof gives us so much horror, that we presently bury them out of our sight, whenever we find them elsewhere than in Charnel-houses or Church-yards) were the occasion of their greatest joy; because they concluded from thence the happiness of those that had been devoured, wishing after their Death to meet with the like good luck.

*L'incertitude des Signes de la Mort, 1749, t. 1, p. 439.

†Rites of Funeral, Ancient and Modern, 1683, p. 45.

The same author states, and Bruhier corroborates the assertion, that the Parthians, Medes, Iberians, Caspians, and a few others, had such a horror and aversion of the corruption and decomposition of the dead, and of their being eaten by worms, that they threw out the bodies into the open fields to be devoured by wild beasts, a part of their belief being that persons so devoured would not be entirely extinct, but enjoy at least a partial sort of life in their living sepulchers. It is quite probable that for these and other reasons the Bactrians and Hircanians trained dogs for this special purpose, called *Canes sepulchrales*, which received the greatest care and attention, for it was deemed proper that the souls of the deceased should have strong and lusty frames to dwell in.

The Buddhists of Bhotan are said to expose the bodies of their dead on top of high rocks.

According to Tegg, whose work is quoted frequently, in the London Times of January 28, 1876, Mr. Monier Williams writes from Calcutta regarding the "Towers of Silence," so called, of the Parsees, who, it is well known, are the descendants of the ancient Persians expelled from Persia by the Mohammedan conquerors, and settled at Surat about 1,100 years since. This gentleman's narrative is freely made use of to show how the custom of the exposure of the dead to birds of prey has continued up to the present time.

The Dakhmas, or Parsee towers of silence, are erected in a garden on the highest point of Malabar Hill, a beautiful, rising ground on one side of Black Bay, noted for the bungalows and compounds of the European and wealthier inhabitants of Bombay scattered in every direction over its surface.

The garden is approached by a well-constructed, private road, all access to which, except to Parsees, is barred by strong iron gates.

The garden is described as being very beautiful, and he says:

No English nobleman's garden could be better kept, and no pen could do justice to the glories of its flowering shrubs, cypresses, and palms. It seemed the very ideal, not only of a place of sacred silence, but of peaceful rest.

The towers are five in number, built of hardest black granite, about 40 feet in diameter and 25 in height, and constructed so solidly as almost to resist absolutely the ravages of time. The oldest and smallest of the towers was constructed about 200 years since, when the Parsees first settled in Bombay, and is used only for a certain family. The next oldest was erected in 1756, and the three others during the next century. A sixth tower of square shape stands alone, and is only used for criminals.

The writer proceeds as follows:

Though wholly destitute of ornament and even of the simplest moldings, the parapet of each tower possesses an extraordinary coping, which instantly attracts and fascinates the gaze. It is a coping formed, not of dead stone, but of living vultures. These birds, on the occasion of my visit, had settled themselves side by side in perfect order and in a complete circle around the parapets of the towers, with their heads pointing inwards, and so lazily did they sit there, and so motionless was their whole mien, that, except for their color, they might have been carved out of the stonework.

Fig. 3.—Parsee Towers of Silence (interior).

No one is allowed to enter the towers except the corpse-bearers, nor is any one permitted within thirty feet of the immediate precincts. A model was shown Mr. Williams, and from it he drew up this description:

Imagine a round column or massive cylinder, 12 or 14 feet high and at least 40 feet in diameter, built throughout of solid stone except in the center, where a well, 5 or 6 feet across, leads down to an excavation under the masonry, containing four drains at right angles to each other, terminated by holes filled with charcoal. Round the upper surface of this solid circular cylinder, and completely hiding the interior from view, is a stone parapet, 10 or 12 feet in height. This it is which, when viewed from the outside, appears to form one piece with the solid stone-work, and being, like it, covered with chunam, gives the whole the appearance of a low tower. The upper surface of the solid stone column is divided into 72 compartments, or open receptacles, radiating like the spokes of a wheel from the central well, and arranged in three concentric rings, separated from each other by narrow ridges of stone, which are grooved to act as channels for conveying all moisture from the receptacles into the well and into the lower drains. It should be noted that the number "3" is emblematical of Zoroaster's three precepts, and the number "72" of the chapters of his Yasna, a portion of the Zend-Avestá.

Each circle of open stone coffins is divided from the next by a pathway, so that there are three circular pathways, the last encircling the central well, and these three pathways are crossed by another pathway conducting from the solitary door which admits the corpse-bearers from the exterior. In the outermost circle of the stone coffins are placed the bodies of males, in the middle those of the females, and in the inner and smallest circle nearest the well those of children.

While I was engaged with the secretary in examining the model, a sudden stir among the vultures made us raise our heads. At least a hundred birds collected round one of the towers began to show symptoms of excitement, while others swooped down from neighboring trees. The cause of this sudden abandonment of their previous apathy soon revealed itself. A funeral was seen to be approaching. However distant the house of a deceased person, and whether he be rich or poor, high or low in rank, his body is always carried to the towers by the official corpse-bearers, called *Nasasalár*, who form a distinct class, the mourners walking behind.

Before they remove the body from the house where the relatives are assembled, funeral prayers are recited, and the corpse is exposed to the gaze of a dog, regarded by the Parsees as a sacred animal. This latter ceremony is called *sagdid*.

Then the body, swathed in a white sheet, is placed in a curved metal trough, open at both ends, and the corpse-bearers, dressed in pure white garments, proceed with it towards the towers. They are followed by the mourners at a distance of at least 30 feet, in pairs, also dressed in white, and each couple joined by holding a white handkerchief between them. The particular funeral I witnessed was that of a child. When the two corpse-bearers reached the path leading by a steep incline to the door of the tower, the mourners, about eight in number, turned back and entered one of the prayer-houses. "There," said the secretary, "they repeat certain gáthás, and pray that the spirit of the deceased may be safely transported, on the fourth day after death, to its final resting-place."

The tower selected for the present funeral was one in which other members of the same family had before been laid. The two bearers speedily unlocked the door, reverently conveyed the body of the child into the interior, and, unseen by any one, laid it uncovered in one of the open stone receptacles nearest the central well. In two minutes they reappeared with the empty bier and white cloth, and scarcely had they closed the door when a dozen vultures swooped down upon the body and were rapidly followed by others. In five minutes more we saw the satiated birds fly back and lazily settle down again upon the parapet. They had left nothing behind but a skeleton. Meanwhile, the bearers were seen to enter a building shaped like a high barrel. There,

as the secretary informed me, they changed their clothes and washed themselves. Shortly afterwards we saw them come out and deposit their cast-off funeral garments in a stone receptacle near at hand. Not a thread leaves the garden, lest it should carry defilement into the city. Perfectly new garments are supplied at each funeral. In a fortnight, or, at most, four weeks, the same bearers return, and, with gloved hands and implements resembling tongs, place the dry skeleton in the central well. There the bones find their last resting-place, and there the dust of whole generations of Parsees commingling is left undisturbed for centuries.

The revolting sight of the gorged vultures made me turn my back on the towers with ill-concealed abhorrence. I asked the secretary how it was possible to become reconciled to such usage. His reply was nearly in the following words: "Our prophet Zoroaster, who lived 6,000 years ago, taught us to regard the elements as symbols of the Deity. Earth, fire, water, he said, ought never, under any circumstances, to be defiled by contact with putrefying flesh. Naked, he said, came we into the world and naked we ought to leave it. But the decaying particles of our bodies should be dissipated as rapidly as possible and in such a way that neither Mother Earth nor the beings she supports should be contaminated in the slightest degree In fact, our prophet was the greatest of health officers, and, following his sanitary laws, we build our towers on the tops of the hills, above all human habitations. We spare no expense in constructing them of the hardest materials, and we expose our putrescent bodies in open stone receptacles, resting on fourteen feet of solid granite, not necessarily to be consumed by vultures, but to be dissipated in the speediest possible manner and without the possibility of polluting the earth or contaminating a single being dwelling thereon. God, indeed, sends the vultures, and, as a matter of fact, these birds do their appointed work much more expeditiously than millions of insects would do if we committed our bodies to the ground. In a sanitary point of view, nothing can be more perfect than our plan. Even the rain-water which washes our skeletons is conducted by channels into purifying charcoal. Here in these five towers rest the bones of all the Parsees that have lived in Bombay for the last two hundred years. We form a united body in life and we are united in death."

It would appear that the reasons given for this peculiar mode of disposing of the dead by the Parsee secretary are quite at variance with the ideas advanced by Muret regarding the ancient Persians, and to which allusion has already been made. It might be supposed that somewhat similar motives to those governing the Parsees actuated those of the North American Indians who deposit their dead on scaffolds and trees, but the theory becomes untenable when it is recollected that great care is taken to preserve the dead from the ravages of carnivorous birds, the corpse being carefully enveloped in skins and firmly tied up with ropes or thongs.

Figures 3 and 4 are representations of the Parsee towers of silence, drawn by Mr. Holmes, mainly from the description given.

George Gibbs* gives the following account of burial among the Klamath and Trinity Indians of the Northwest coast, the information having been originally furnished him by James G. Swan.

The graves, which are in the immediate vicinity of their houses, exhibit very considerable taste and a laudable care. The dead are inclosed in rude coffins formed by placing four boards around the body, and covered with earth to some depth; a heavy plank, often supported by upright head and foot stones, is laid upon the top, or stones are built up into a wall about a foot above the ground, and the top flagged with

* Schoolcraft Hist. Ind. Tribes of the United States, 1853, Pt. 3, p. 140.

FIG. 4 PAPYRUS SKIFF OF THEBES

others. The graves of the chiefs are surrounded by neat wooden palings, each pale ornamented with a feather from the tail of the bald eagle. Baskets are usually staked down by the side, according to the wealth or popularity of the individual, and sometimes other articles for ornament or use are suspended over them. The funeral ceremonies occupy three days, during which the soul of the deceased is in danger from *O-mah-á*, or the devil. To preserve it from this peril, a fire is kept up at the grave, and the friends of the deceased howl around it to scare away the demon. Should they not be successful in this the soul is carried down the river, subject, however, to redemption by *Péh-ho-wan* on payment of a big knife. After the expiration of three days it is all well with them.

The question may well be asked, is the big knife a "sop to Cerberus"?

To Dr. Charles E. McChesney, acting assistant surgeon, United States Army, one of the most conscientious and careful of observers, the writer is indebted for the following interesting account of the mortuary customs of the

WAH-PETON AND SISSETON SIOUX OF DAKOTA.

A large proportion of these Indians being members of the Presbyterian church (the missionaries of which church have labored among them for more than forty years past), the dead of their families are buried after the customs of that church, and this influence is felt to a great extent among those Indians who are not strict church members, so that they are dropping one by one the traditional customs of their tribe, and but few can now be found who bury their dead in accordance with their customs of twenty or more years ago. The dead of those Indians who still adhere to their modern burial customs are buried in the ways indicated below.

Warrior.—After death they paint a warrior red across the mouth, or they paint a hand in black color, with the thumb on one side of the mouth and the fingers separated on the other cheek, the rest of the face being painted red. (This latter is only done as a mark of respect to a specially brave man.) Spears, clubs, and the medicine-bag of the deceased when alive are buried with the body, the medicine-bag being placed on the bare skin over the region of the heart. There is not now, nor has there been, among these Indians any special preparation of the grave. The body of a warrior is generally wrapped in a blanket or piece of cloth (and frequently in addition is placed in a box) and buried in the grave prepared for the purpose, always, as the majority of these Indians inform me, with the head towards the *south*. (I have, however, seen many graves in which the head of the occupant had been placed to the *east*. It may be that these graves were those of Indians who belonged to the church; and a few Indians inform me that the head is sometimes placed towards the *west*, according to the occupant's belief when alive as to the direction from which his guiding medicine came, and I am personally inclined to give credence to this latter as sometimes occurring.) In all burials, when the person has died a natural death, or had not been murdered, and whether man, woman, or child, the body is placed in the grave with the face *up*. In cases, however, when a man or woman has been murdered by one of their own tribe, the body was, and is always, placed in the grave with the face *down*, head to the *south*, and a piece of fat (bacon or pork) placed in the mouth. This piece of fat is placed in the mouth, as these Indians say, to prevent the spirit of the murdered person driving or scaring the game from that section of country. Those Indians who state that their dead are always buried with the head towards the south say they do so in order that the spirit of the deceased may go to the south, the land from which these Indians believe they originally came.

Women and children.—Before death the face of the person expected to die is often painted in a red color. When this is not done before death it is done afterwards; the

body being then buried in a grave prepared for its reception, and in the manner described for a warrior, cooking-utensils taking the place of the warrior's weapons. In cases of boys and girls a kettle of cooked food is sometimes placed at the head of the grave after the body is covered. Now, if the dead body be that of a boy, all the boys of about his age go up and eat of the food, and in cases of girls all the girls do likewise. This, however, has never obtained as a custom, but is sometimes done in cases of warriors and women also.

Cremation has never been practiced by these Indians. It is now, and always has been, a custom among them to remove a lock of hair from the top or scalp lock of a warrior, or from the left side of the head of a woman, which is carefully preserved by some near relative of the deceased, wrapped in pieces of calico and muslin, and hung in the lodge of the deceased and is considered the ghost of the dead person. To the bundle is attached a tin cup or other vessel, and in this is placed some food for the spirit of the dead person. Whenever a stranger happens in at meal time, this food, however, is not allowed to go to waste; if not consumed by the stranger to whom it is offered, some of the occupants of the lodge eat it. They seem to take some pains to please the ghost of the deceased, thinking thereby they will have good luck in their family so long as they continue to do so. It is a custom with the men when they smoke to offer the pipe to the ghost, at the same time asking it to confer some favor on them, or aid them in their work or in hunting, &c.

There is a feast held over this bundle containing the ghost of the deceased, given by the friends of the dead man. This feast may be at any time, and is not at any particular time, occurring, however, generally as often as once a year, unless, at the time of the first feast, the friends designate a particular time, such, for instance, as when the leaves fall, or when the grass comes again. This bundle is never permitted to leave the lodge of the friends of the dead person, except to be buried in the grave of one of them. Much of the property of the deceased person is buried with the body, a portion being placed under the body and a portion over it. Horses are sometimes killed on the grave of a warrior, but this custom is gradually ceasing, in consequence of the value of their ponies. These animals are therefore now generally given away by the person before death, or after death disposed of by the near relatives. Many years ago it was customary to kill one or more ponies at the grave. In cases of more than ordinary wealth for an Indian, much of his personal property is now, and has ever been, reserved from burial with the body, and forms the basis for a gambling party, which will be described hereafter. No food is ever buried in the grave, but some is occasionally placed at the head of it; in which case it is consumed by the friends of the dead person. Such is the method that was in vogue with these Indians twenty years ago, and which is still adhered to, with more or less exactness, by the majority of them, the exceptions being those who are strict church members and those very few families who adhere to their ancient customs.

Before the year 1850 it was a custom, for as long back as the oldest members of these tribes can remember, and with the usual tribal traditions handed down from generation to generation, in regard to this as well as to other things, for these Indians to bury in a tree or on a platform, and in those days an Indian was only buried in the ground as a mark of disrespect in consequence of the person having been murdered, in which case the body would be buried in the ground, *face down*, head toward the south and with a piece of fat in the mouth. * * * The platform upon which the body was deposited was constructed of four crotched posts firmly set in the ground, and connected near the top by cross-pieces, upon which was placed boards, when obtainable, and small sticks of wood, sometimes hewn so as to give a firm resting-place for the body. This platform had an elevation of from six to eight or more feet, and never contained but one body, although frequently having sufficient surface to accommodate two or three. In burying in the crotch of a tree and on platforms, the head of the dead person was always placed towards the south; the body was wrapped in blankets or pieces of cloth securely tied, and many of the personal effects

of the deceased were buried with it; as in the case of a warrior, his bows and arrows, war-clubs, &c., would be placed alongside of the body, the Indians saying he would need such things in the next world.

I am informed by many of them that it was a habit, before their outbreak, for some to carry the body of a near relative whom they held in great respect with them on their moves, for a greater or lesser time, often as long as two or three years before burial. This, however, never obtained generally among them, and some of them seem to know nothing about it. It has of late years been entirely dropped, except when a person dies away from home, it being then customary for the friends to bring the body home for burial.

Mourning ceremonies.—The mourning ceremonies before the year 1860 were as follows: After the death of a warrior the whole camp or tribe would be assembled in a circle, and after the widow had cut herself on the arms, legs, and body with a piece of flint, and removed the hair from her head, she would go around the ring any number of times she chose, but each time was considered as an oath that she would not marry for a year, so that she could not marry for as many years as times she went around the circle. The widow would all this time keep up a crying and wailing. Upon the completion of this the friends of the deceased would take the body to the platform or tree where it was to remain, keeping up all this time their wailing and crying. After depositing the body, they would stand under it and continue exhibiting their grief, the squaws by hacking their arms and legs with flint and cutting off the hair from their head. The men would sharpen sticks and run them through the skin of their arms and legs, both men and women keeping up their crying generally for the remainder of the day, and the near relatives of the deceased for several days thereafter. As soon as able, the warrior friends of the deceased would go to a near tribe of their enemies and kill one or more of them if possible, return with their scalps, and exhibit them to the deceased person's relatives, after which their mourning ceased, their friends considering his death as properly avenged; this, however, was many years ago, when their enemies were within reasonable striking distance, such, for instance, as the Chippewas and the Arickarees, Gros Ventres and Mandan Indians. In cases of women and children, the squaws would cut off their hair, hack their persons with flint, and sharpen sticks and run them through the skin of the arms and legs, crying as for a warrior.

It was an occasional occurrence twenty or more years ago for a squaw when she lost a favorite child to commit suicide by hanging herself with a lariat over the limb of a tree. This could not have prevailed to any great extent, however, although the old men recite several instances of its occurrence, and a very few examples within recent years. Such was their custom before the Minnesota outbreak, since which time it has gradually died out, and at the present time these ancient customs are adhered to by but a single family, known as the seven brothers, who appear to retain all the ancient customs of their tribe. At the present time, as a mourning observance, the squaws hack themselves on their legs with knives, cut off their hair, and cry and wail around the grave of the dead person, and the men in addition paint their faces, but no longer torture themselves by means of sticks passed through the skin of the arms and legs. This cutting and painting is sometimes done before and sometimes after the burial of the body. I also observe that many of the women of these tribes are adopting so much of the customs of the whites as prescribes the wearing of black for certain periods. During the period of mourning these Indians never wash their face, or comb their hair, or laugh. These customs are observed with varying degree of strictness, but not in many instances with that exactness which characterized these Indians before the advent of the white man among them. There is not now any permanent mutilation of the person practiced as a mourning ceremony by them. That mutilation of a finger by removing one or more joints, so generally observed among the Minnetarree Indians at the Fort Berthold, Dak., Agency, is not here seen, although the old men of these tribes inform me that it was an ancient custom among

their women, on the occasion of the burial of a husband, to cut off a portion of a finger and have it suspended in the tree above his body. I have, however, yet to see an example of this having been done by any of the Indians now living, and the custom must have fallen into disuse more than seventy years ago.

In regard to the period of mourning, I would say that there does not now appear to be, and, so far as I can learn, never was, any fixed period of mourning, but it would seem that, like some of the whites, they mourn when the subject is brought to their minds by some remark or other occurrence. It is not unusual at the present time to hear a man or woman cry and exclaim, "O, my poor husband!" "O, my poor wife!" or "O, my poor child!" as the case may be, and, upon inquiring, learn that the event happened several years before. I have elsewhere mentioned that in some cases much of the personal property of the deceased was and is reserved from burial with the body, and forms the basis of a gambling party. I shall conclude my remarks upon the burial customs, &c., of these Indians by an account of this, which they designate as the "ghost's gamble."

The account of the game will be found in another part of this paper.

As illustrative of the preparation of the dead Indian warrior for the tomb, a translation of Schiller's beautiful burial song is here given. It is believed to be by Bulwer, and for it the writer is indebted to the kindness of Mr. Benjamin Drew, of Washington, D. C.:

BURIAL OF THE CHIEFTAIN.

See on his mat, as if of yore,
  How lifelike sits he here;
With the same aspect that he wore
  When life to him was dear.
But where the right arm's strength, and where
  The breath he used to breathe
To the Great Spirit aloft in air,
  The peace-pipe's lusty wreath?
And where the hawk-like eye, alas!
  That wont the deer pursue
Along the waves of rippling grass,
  Or fields that shone with dew?
Are these the limber, bounding feet
  That swept the winter snows?
What startled deer was half so fleet,
  Their speed outstripped the roe's.
These hands that once the sturdy bow
  Could supple from its pride,
How stark and helpless hang they now
  Adown the stiffened side!
Yet weal to him! at peace he strays
  Where never fall the snows,
Where o'er the meadow springs the maize
  That mortal never sows;
Where birds are blithe in every brake,
  Where forests teem with deer,
Where glide the fish through every lake,
  One chase from year to year!
With spirits now he feasts above;
  All left us, to revere
The deeds we cherish with our love,
  The rest we bury here.

Here bring the last gifts; loud and shrill
  Wail death-dirge of the brave!
What pleased him most in life may still
  Give pleasure in the grave.
We lay the axe beneath his head
  He swung when strength was strong,
The bear on which his hunger fed—
  The way from earth is long!
And here, new-sharpened, place the knife
  Which severed from the clay,
From which the axe had spoiled the life,
  The conquered scalp away.
The paints that deck the dead bestow,
  Aye, place them in his hand,
That red the kingly shade may glow
  Amid the spirit land.

The position in which the body is placed, as mentioned by Dr. McChesney, face upwards, while of common occurrence among most tribes of Indians, is not invariable as a rule, for the writer discovered at a cemetery belonging to an ancient pueblo in the valley of the Chama, near Abiquiu, N. Mex., a number of bodies, all of which had been buried face downward. The account originally appeared in Field and Forest, 1877, vol. iii, No. 1, p. 9.

On each side of the town were noticed two small arroyas or water-washed ditches, within 30 feet of the walls, and a careful examination of these revealed the objects of our search. At the bottom of the arroyas, which have certainly formed subsequent to the occupation of the village, we found portions of human remains, and following up the walls of the ditch soon had the pleasure of discovering several skeletons *in situ*. The first found was in the eastern arroya, and the grave in depth was nearly 8 feet below the surface of the mesa. The body had been placed in the grave face downward, the head pointing to the south. Two feet above the skeleton were two shining black earthen vases, containing small bits of charcoal, the bones of mammals, birds, and partially consumed corn, and above these "*ollas*" the earth to the surface was filled with pieces of charcoal. Doubtless the remains found in the vases served at a funeral feast prior to the inhumation. We examined very carefully this grave, hoping to find some utensils, ornaments, or weapons, but none rewarded our search. In all of the graves examined the bodies were found in similar positions and under similar circumstances in both arroyas, several of the skeletons being those of children. * * * No information could be obtained as to the probable age of these interments, the present Indians considering them as dating from the time when their ancestors with Moctezuma came from the *north*.

The Coyotero Apaches, according to Dr. W. J. Hoffman,* in disposing of their dead, seem to be actuated by the desire to spare themselves any needless trouble, and prepare the defunct and the grave in this manner:

The Coyoteros, upon the death of a member of the tribe, partially wrap up the corpse and deposit it into the cavity left by the removal of a small rock or the stump of a tree. After the body has been crammed into the smallest possible space the rock or stump is again rolled into its former position, when a number of stones are placed around the base to keep out the coyotes. The nearest of kin usually mourn for the period of one month, during that time giving utterance at intervals to the most dismal lamentations, which are apparently sincere. During the day this obligation is

*U. S. Geol. Surv. of Terr. 1876, p. 473.

frequently neglected or forgotten, but when the mourner is reminded of his duty he renews his howling with evident interest. This custom of mourning for the period of thirty days corresponds to that formerly observed by the Natchez.

Somewhat similar to this rude mode of sepulture is that described in the life of Moses Van Campen*, which relates to the Indians formerly inhabiting Pennsylvania:

Directly after, the Indians proceeded to bury those who had fallen in battle, which they did by rolling an old log from its place and laying the body in the hollow thus made, and then heaping upon it a little earth.

As a somewhat curious, if not exceptional, interment, the following account, relating to the Indians of New York, is furnished, by Mr. Franklin B. Hough, who has extracted it from an unpublished journal of the agents of a French company kept in 1794:

CANOE BURIAL IN GROUND.

Saw Indian graves on the plateau of Independence Rock. The Indians plant a stake on the right side of the head of the deceased and bury them in a bark canoe. Their children come every year to bring provisions to the place where their fathers are buried. One of the graves had fallen in, and we observed in the soil some sticks for stretching skins, the remains of a canoe, &c., and the two straps for carrying it, and near the place where the head lay were the traces of a fire which they had kindled for the soul of the deceased to come and warm itself by and to partake of the food deposited near it.

These were probably the Massasauga Indians, then inhabiting the north shore of Lake Ontario, but who were rather intruders here, the country being claimed by the Oneidas.

It is not to be denied that the use of canoes for coffins has occasionlly been remarked, for the writer in 1875 removed from the graves at Santa Barbara, California, an entire skeleton which was discovered in a redwood canoe, but it is thought that the individual may have been a noted fisherman, particularly as the implements of his vocation—nets, fish-spears, &c.—were near him, and this burial was only an exemplification of the well-rooted belief common to all Indians, that the spirit in the next world makes use of the same articles as were employed in this one. It should be added that of the many hundreds of skeletons uncovered at Santa Barbara the one mentioned presented the only example of the kind.

Among the Indians of the Mosquito coast, in Central America, canoe burial in the ground, according to Bancroft, was common, and is thus described:

The corpse is wrapped in cloth and placed in one-half of a pitpan which has been cut in two. Friends assemble for the funeral and drown their grief in *mushla*, the women giving vent to their sorrow by dashing themselves on the ground until covered with blood, and inflicting other tortures, occasionally even committing suicide. As it is supposed that the evil spirit seeks to obtain possession of the body, musicians are called in to lull it to sleep while preparations are made for its removal. All at once four naked men, who have disguised themselves with paint so as not to be recognized and punished by *Wulasha*, rush out from a neighboring hut, and, seizing a rope at-

* Life and adventures of Moses Van Campen, 1841, p. 252.

tached to the canoe, drag it into the woods, followed by the music and the crowd. Here the pitpan is lowered into the grave with bow, arrow, spear, paddle, and other implements to serve the departed in the land beyond; then the other half of the boat is placed over the body. A rude hut is constructed over the grave, serving as a receptacle for the choice food, drink, and other articles placed there from time to time by relatives.

STONE GRAVES OR CISTS.

These are of considerable interest, not only from their somewhat rare occurrence, except in certain localities, but from the manifest care taken by the survivors to provide for the dead what they considered a suitable resting-place. In their construction they resemble somewhat, in the care that is taken to prevent the earth touching the corpse, the class of graves previously described.

A number of cists have been found in Tennessee, and are thus described by Moses Fiske: *

There are many burying-grounds in West Tennessee with regular graves. They dug them 12 or 18 inches deep, placed slabs at the bottom, ends and sides, forming a kind of stone coffin, and, after laying in the body, covered it over with earth.

It may be added that, in 1873, the writer assisted at the opening of a number of graves of men of the reindeer period, near Solutré, in France, and they were almost identical in construction with those described by Mr. Fiske, with the exception that the latter were deeper; this, however, may be accounted for if it is considered how great a deposition of earth may have taken place during the many centuries which have elapsed since the burial. Many of the graves explored by the writer in 1875, at Santa Barbara, resembled somewhat cist graves, the bottom and sides of the pit being lined with large flat stones, but there were none directly over the skeletons.

The next account is by Maj. J. W. Powell, the result of his own observation in Tennessee:

The burial places, or cemeteries, are exceedingly abundant throughout the State. Often hundreds of graves may be found on a single hillside. The same people sometimes bury in scattered graves and in mounds—the mounds being composed of a large number of cist graves. The graves are increased by additions from time to time. The additions are sometimes placed above and sometimes at the sides of the others. In the first burials there is a tendency to a concentric system with the feet towards the center, but subsequent burials are more irregular, so that the system is finally abandoned before the place is desired for cemetery purposes.

Some other peculiarities are of interest. A larger number of interments exhibit the fact that the bodies were placed there before the decay of the flesh, and in many instances collections of bones are buried. Sometimes these bones are placed in some order about the crania, and sometimes in irregular piles, as if the collection of bones had been emptied from a sack. With men, pipes, stone hammers, knives, arrowheads, &c., were usually found; with women, pottery, rude beads, shells, &c.; with children, toys of pottery, beads, curious pebbles, &c.

Sometimes, in the subsequent burials, the side slab of a previous burial was used as a portion of the second cist. All of the cists were covered with slabs.

* Trans. Amer. Antiq. Soc., 1820, vol. i, p. 302.

Dr. Jones has given an exceedingly interesting account of the stone graves of Tennessee, in his volume published by the Smithsonian Institution, to which valuable work * the reader is referred for a more detailed account of this mode of burial.

G. K. Gilbert, of the United States Geological Survey, informs the writer that in 1878 he had a conversation with an old Moquis chief as to their manner of burial, which is as follows: The body is placed in a receptacle or cist of stone slabs or wood, in a sitting posture, the hands near the knees, and clasping a stick (articles are buried with the dead), and it is supposed that the soul finds its way out of the grave by climbing up the stick, which is allowed to project above the ground after the grave is filled in.

The Indians of Illinois, on the Saline River, according to George Escoll Sellers,† inclosed their dead in cists, the description of which is as follows:

Above this bluff, where the spur rises at an angle of about 30°, it has been terraced and the terrace as well as the crown of the spur have been used as a cemetery; portions of the terraces are still perfect; all the burials appear to have been made in rude stone cists, that vary in size from 18 inches by 3 feet to 2 feet by 4 feet, and from 18 inches to 2 feet deep. They are made of thin-bedded sandstone slabs, generally roughly shaped, but some of them have been edged and squared with considerable care, particularly the covering slabs. The slope below the terraces was thickly strewed with these slabs, washed out as the terraces have worn away, and which have since been carried off for door-steps and hearth-stones. I have opened many of these cists; they nearly all contain fragments of human bones far gone in decay, but I have never succeeded in securing a perfect skull; even the clay vessels that were interred with the dead have disintegrated, the portions remaining being almost as soft and fragile as the bones. Some of the cists that I explored were paved with valves of fresh-water shells, but most generally with the fragments of the great salt-pans, which in every case are so far gone in decay as to have lost the outside markings. This seems conclusively to couple the tenants of these ancient graves with the makers and users of these salt-pans. The great number of graves and the quantity of slabs that have been washed out prove either a dense population or a long occupancy, or both.

W. J. Owsley, of Fort Hall, Idaho, furnishes the writer with a description of the cist graves of Kentucky, which differ somewhat from other accounts, inasmuch as the graves appeared to be isolated.

I remember that when a school-boy in Kentucky, some twenty-five years ago, of seeing what was called "Indian graves," and those that I examined were close to small streams of water, and were buried in a sitting or squatting posture and inclosed by rough, flat stones, and were then buried from 1 to 4 feet from the surface. Those graves which I examined, which examination was not very minute, seemed to be isolated, no two being found in the same locality. When the burials took place I could hardly conjecture, but it must have been, from appearances, from fifty to one hundred years. The bones that I took out on first appearance seemed tolerably perfect, but on short exposure to the atmosphere crumbled, and I was unable to save a specimen. No implements or relics were observed in those examined by me, but I have heard of others who have found such. In that State, Kentucky, there are a number of places

* Antiquities of Tennessee. Smith. Inst. Cont. to Knowledge. No. 259, 1876. Pp. 1, 8, 37, 52, 55, 82.

† Pop. Sc. Month., Sept., 1877, p. 577.

where the Indians burned their dead and left mounds of earth over the graves, but I have not examined them myself. * * *

According to Bancroft,* the Dorachos, an isthmian tribe of Central America, also followed the cist form of burial.

In Veragua the Dorachos had two kinds of tombs, one for the principal men, constructed with flat stones laid together with much care, and in which were placed costly jars and urns filled with food and wine for the dead. Those for the plebians were merely trenches, in which were deposited some gourds of maize and wine, and the place filled with stones. In some parts of Panama and Darien only the chiefs and lords received funeral rites. Among the common people a person feeling his end approaching either went himself or was led to the woods by his wife, family, or friends, who, supplying him with some cake or ears of corn and a gourd of water, then left him to die alone or to be assisted by wild beasts. Others, with more respect for their dead, buried them in sepulchers made with niches, where they placed maize and wine and renewed the same annually. With some, a mother dying while suckling her infant, the living child was placed at her breast and buried with her, in order that in her future state she might continue to nourish it with her milk.

BURIAL IN MOUNDS.

In view of the fact that the subject of mound-burial is so extensive, and that in all probability a volume by a member of the Bureau of Ethnology may shortly be published, it is not deemed advisable to devote any considerable space to it in this paper, but a few interesting examples may be noted to serve as indications to future observers.

The first to which attention is directed is interesting as resembling cist-burial combined with deposition in mounds. The communication is from Prof. F. W. Putnam, curator of the Peabody Museum of Archæology, Cambridge, made to the Boston Society of Natural History, and is published in volume XX of its proceedings, October 15, 1878:

* * * He then stated that it would be of interest to the members, in connection with the discovery of dolmens in Japan, as described by Professor Morse, to know that within twenty-four hours there had been received at the Peabody Museum a small collection of articles taken from rude dolmens (or chambered barrows, as they would be called in England), recently opened by Mr. E. Curtiss, who is now engaged, under his direction, in exploration for the Peabody Museum.

These chambered mounds are situated in the eastern part of Clay County, Missouri, and form a large group on both sides of the Missouri River. The chambers are, in the three opened by Mr. Curtiss, about 8 feet square, and from 4½ to 5 feet high, each chamber having a passage-way several feet in length and 2 in width, leading from the southern side and opening on the edge of the mound formed by covering the chamber and passage-way with earth. The walls of the chambered passages were about 2 feet thick, vertical, and well made of stones, which were evenly laid without clay or mortar of any kind. The top of one of the chambers had a covering of large, flat rocks, but the others seem to have been closed over with wood. The chambers were filled with clay which had been burnt, and appeared as if it had fallen in from above. The inside walls of the chambers also showed signs of fire. Under the burnt clay, in each chamber, were found the remains of several human skeletons, all of which had been burnt to such an extent as to leave but small fragments of the bones, which were mixed with the ashes and charcoal. Mr. Curtiss thought that in one chamber

* Nat. Races of the Pacific States, 1874, vol. i, p. 780.

he found the remains of 5 skeletons and in another 13. With these skeletons there were a few flint implements and minute fragments of vessels of clay.

A large mound near the chambered mounds was also opened, but in this no chambers were found. Neither had the bodies been burnt. This mound proved remarkably rich in large flint implements, and also contained well-made pottery and a peculiar "gorget" of red stone. The connection of the people who placed the ashes of their dead in the stone chambers with those who buried their dead in the earth mounds is, of course, yet to be determined.

It is quite possible, indeed probable, that these chambers were used for secondary burials, the bodies having first been cremated.

In the volume of the proceedings already quoted, the same investigator gives an account of other chambered mounds which are, like the preceding, very interesting, the more so as adults only were inhumed therein, children having been buried beneath the dwelling-floors:

Mr. F. W. Putnam occupied the rest of the evening with an account of his explorations of the ancient mounds and burial places in the Cumberland Valley, Tennessee.

The excavations had been carried on by himself, assisted by Mr. Edwin Curtiss, for over two years, for the benefit of the Peabody Museum at Cambridge. During this time many mounds of various kinds had been thoroughly explored, and several thousand of the singular stone graves of the mound builders of Tennessee had been carefully opened. * * * Mr. Putnam's remarks were illustrated by drawings of several hundred objects obtained from the graves and mounds, particularly to show the great variety of articles of pottery and several large and many unique forms of implements of chipped flint. He also exhibited and explained in detail a map of a walled town of this old nation. This town was situated on the Lindsley estate, in a bend of Spring Creek. The earth embankment, with its accompanying ditch, encircled an area of about 12 acres. Within this inclosure there was one large mound with a flat top, 15 feet high, 130 feet long, and 90 feet wide, which was found not to be a burial mound. Another mound near the large one, about 50 feet in diameter, and only a few feet high, contained 60 human skeletons, each in a carefully-made stone grave, the graves being arranged in two rows, forming the four sides of a square, and in three layers. * * * The most important discovery he made within the inclosure was that of finding the remains of the houses of the people who lived in this old town. Of them about 70 were traced out and located on the map by Professor Buchanan, of Lebanon, who made the survey for Mr. Putnam. Under the floors of hard clay, which was in places much burnt, Mr. Putnam found the graves of children. As only the bodies of adults had been placed in the one mound devoted to burial, and as nearly every site of a house he explored had from one to four graves of children under the clay floor, he was convinced that it was a regular custom to bury the children in that way. He also found that the children had undoubtedly been treated with affection, as in their small graves were found many of the best pieces of pottery he obtained, and also quantities of shell-beads, several large pearls, and many other objects which were probably the playthings of the little ones while living.*

This cist mode of burial is by no means uncommon in Tennessee, as it is frequently mentioned by writers on North American archæology.

The examples which follow are specially characteristic, some of them serving to add strength to the theory that mounds were for the most part used for secondary burial, although intrusions were doubtless common.

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*A detailed account of this exploration, with many illustrations, will be found in the Eleventh Annual Report of the Peabody Museum, Cambridge, 1878.

Caleb Atwater* gives this description of the

BURIAL MOUNDS OF OHIO.

Near the center of the round fort * * * was a tumulus of earth about 10 feet in height and several rods in diameter at its base. On its eastern side, and extending 6 rods from it, was a semicircular pavement composed of pebbles such as are now found in the bed of the Scioto River, from whence they appear to have been brought. The summit of this tumulus was nearly 30 feet in diameter, and there was a raised way to it, leading from the east, like a modern turnpike. The summit was level. The outline of the semicircular pavement and the walk is still discernible. The earth composing this mound was entirely removed several years since. The writer was present at its removal and carefully examined the contents. It contained—

1st. Two human skeletons, lying on what had been the original surface of the earth.

2d. A great quantity of arrow-heads, some of which were so large as to induce a belief that they were used as spear-heads.

3d. The handle either of a small sword or a large knife, made of an elk's horn. Around the end where the blade had been inserted was a ferule of silver, which, though black, was not much injured by time. Though the handle showed the hole where the blade had been inserted, yet no iron was found, but an oxyde remained of similar shape and size.

4th. Charcoal and wood ashes on which these articles lay, which were surrounded by several bricks very well burnt. The skeleton appeared to have been burned in a large and very hot fire, which had almost consumed the bones of the deceased. This skeleton was deposited a little to the south of the center of the tumulus; and about 20 feet to the north of it was another, with which were—

5th. A large mirrour about 3 feet in breadth and 1½ inches in thickness. This mirrour was of isinglass (*mica membranacea*), and on it—

6th. A plate of iron which had become an oxyde, but before it was disturbed by the spade resembled a plate of cast iron. The mirrour answered the purpose very well for which it was intended. This skeleton had also been burned like the former, and lay on charcoal and a considerable quantity of wood ashes. A part of the mirrour is in my possession, as well as a piece of brick taken from the spot at the time. The knife or sword handle was sent to Mr. Peal's Museum, at Philadelphia.

To the southwest of this tumulus, about 40 rods from it, is another, more than 90 feet in height, which is shown on the plate representing these works. It stands on a large hill, which appears to be artificial. This must have been the common cemetery, as it contains an immense number of human skeletons of all sizes and ages. The skeletons are laid horizontally, with their heads generally towards the center and the feet towards the outside of the tumulus. A considerable part of this work still stands uninjured, except by time. In it have been found, besides these skeletons, stone axes and knives, and several ornaments, with holes through them, by means of which, with a cord passing through these perforations, they could be worn by their owners. On the south side of this tumulus, and not far from it, was a semicircular fosse, which when I first saw it, was 6 feet deep. On opening it was discovered at the bottom a great quantity of human bones, which I am inclined to believe were the remains of those who had been slain in some great and destructive battle: first, because they belonged to persons who had attained their full size, whereas in the mound adjoining were found the skeletons of persons of all ages; and, secondly, they were here in the utmost confusion, as if buried in a hurry. May we not conjecture that they belonged to the people who resided in the town, and who were victorious in the engagement? Otherwise they would not have been thus honorably buried in the common cemetery.

Chillicothe mound.—Its perpendicular height was about 15 feet, and the diameter of its base about 60 feet. It was composed of sand and contained human bones belonging

* Trans. Amer. Antiq. Soc., 1820, vol. i, p. 174 *et seq.*

to skeletons which were buried in different parts of it. It was not until this pile of earth was removed and the original surface exposed to view that a probable conjecture of its original design could be formed. About 20 feet square of the surface had been leveled and covered with bark. On the center of this lay a human skeleton, over which had been spread a mat manufactured either from weeds or bark. On the breast lay what had been a piece of copper, in the form of a cross, which had now become verdigris. On the breast also lay a stone ornament with two perforations, one near each end, through which passed a string, by means of which it was suspended around the wearer's neck. On this string, which was made of sinews, and very much injured by time, were placed a great many beads made of ivory or bone, for I cannot certainly say which. * * *

Mounds of stone.—Two such mounds have been described already in the county of Perry. Others have been found in various parts of the country. There is one at least in the vicinity of Licking River, not many miles from Newark. There is another on a branch of Hargus's Creek, a few miles to the northeast of Circleville. There were several not very far from the town of Chillicothe. If these mounds were sometimes used as cemeteries of distinguished persons, they were also used as monuments with a view of perpetuating the recollection of some great transaction or event. In the former not more generally than one or two skeletons are found; in the latter none. These mounds are like those of earth, in form of a cone, composed of small stones on which no marks of tools were visible. In them some of the most interesting articles are found, such as urns, ornaments of copper, heads of spears, &c., of the same metal, as well as medals of copper and pickaxes of hornblende; * * * works of this class, compared with those of earth, are few, and they are none of them as large as the mounds at Grave Creek, in the town of Circleville, which belong to the first class. I saw one of these stone tumuli which had been piled on the surface of the earth on the spot where three skeletons had been buried in stone coffins, beneath the surface. It was situated on the western edge of the hill on which the "walled town" stood, on Paint Creek. The graves appear to have been dug to about the depth of ours in the present times. After the bottom and sides were lined with thin flat stones, the corpses were placed in these graves in an eastern and western direction, and large flat stones were laid over the graves; then the earth which had been dug out of the graves was thrown over them. A huge pile of stones was placed over the whole. It is quite probable, however, that this was a work of our present race of Indians. Such graves are more common in Kentucky than Ohio. No article, except the skeletons, was found in these graves; and the skeletons resembled very much the present race of Indians.

The mounds of Sterling County, Illinois, are described by W. C. Holbrook* as follows:

I recently made an examination of a few of the many Indian mounds found on Rock River, about two miles above Sterling, Ill. The first one opened was an oval mound about 20 feet long, 12 feet wide, and 7 feet high. In the interior of this I found a *dolmen* or quadrilateral wall about 10 feet long, 4 feet high, and 4½ feet wide. It had been built of lime-rock from a quarry near by, and was covered with large flat stones. No mortar or cement had been used. The whole structure rested on the surface of the natural soil, the interior of which had been scooped out to enlarge the chamber. Inside of the *dolmen* I found the partly decayed remains of eight human skeletons, two very large teeth of an unknown animal, two fossils, one of which is not found in this place, and a plummet. One of the long bones had been splintered; the fragments had united, but there remained large morbid growths of bone (exostosis) in several places. One of the skulls presented a circular opening about the size of a silver dime. This perforation had been made during life, for the edges had commenced to cicatrize. I

*American Naturalist, 1877, xi, No. 11, p. 688.

later examined three circular mounds, but in them I found no dolmens. The first mound contained three adult human skeletons, a few fragments of the skeleton of a child, the lower maxillary of which indicated it to be about six years old. I also found claws of some carnivorous animal. The surface of the soil had been scooped out and the bodies laid in the excavation and covered with about a foot of earth; fires had then been made upon the grave and the mound afterwards completed. The bones had not been charred. No charcoal was found among the bones, but occurred in abundance in a stratum about one foot above them. Two other mounds, examined at the same time, contain no remains.

Of two other mounds, opened later, the first was circular, about 4 feet high, and 15 feet in diameter at the base, and was situated on an elevated point of land close to the bank of the river. From the top of this mound one might view the country for many miles in almost any direction. On its summit was an oval altar 6 feet long and 4½ wide. It was composed of flat pieces of limestone, which had been burned red, some portions having been almost converted into lime. On and about this altar I found abundance of charcoal. At the sides of the altar were fragments of human bones, some of which had been charred. It was covered by a natural growth of vegetable mold and sod, the thickness of which was about 10 inches. Large trees had once grown in this vegetable mold, but their stumps were so decayed I could not tell with certainty to what species they belonged. Another large mound was opened which contained nothing.

The next account relates to the grave-mounds near Pensacola, Fla., and was originally published by Dr. George M. Sternberg, surgeon United States Army:*

Before visiting the mound I was informed that the Indians were buried in it in an upright position, each one with a clay pot on his head. This idea was based upon some superficial explorations which had been made from time to time by curiosity hunters. Their excavations had, indeed, brought to light pots containing fragments of skulls, but not buried in the position they imagined. Very extensive explorations, made at different times by myself, have shown that only fragments of skulls and of the long bones of the body are to be found in the mound, and that these are commonly associated with earthen pots, sometimes whole, but more frequently broken fragments only. In some instances portions of the skull were placed in a pot, and the long bones were deposited in its immediate vicinity. Again, the pots would contain only sand, and fragments of bones would be found near them. The most successful "find" I made was a whole nest of pots, to the number of half a dozen, all in a good state of preservation, and buried with a fragment of skull, which I take, from its small size, to have been that of a female. Whether this female was thus distinguished above all others buried in the mound by the number of pots deposited with her remains because of her skill in the manufacture of such ware, or by reason of the unusual wealth of her sorrowing husband, must remain a matter of conjecture. I found, altogether, fragments of skulls and thigh-bones belonging to at least fifty individuals, but in no instance did I find anything like a complete skeleton. There were no vertebræ, no ribs, no pelvic bones, and none of the small bones of the hands and feet. Two or three skulls, nearly perfect, were found, but they were so fragile that it was impossible to preserve them. In the majority of instances, only fragments of the frontal and parietal bones were found, buried in pots or in fragments of pots too small to have ever contained a complete skull. The conclusion was irresistible that this was not a burial-place for *the bodies* of deceased Indians, but that the bones had been gathered from some other locality for burial in this mound, or that cremation was practiced before burial, and the fragments of bone not consumed by fire were gathered and deposited in the mound. That the latter supposition is the correct one I deem probable from the fact that in digging in

* Proc. Am. Ass. Adv. of Science, 1875, p. 288.

the mound evidences of fire are found in numerous places, but without any regularity as to depth and position. These evidences consist in strata of from one to four inches in thickness, in which the sand is of a dark color and has mixed with it numerous small fragments of charcoal.

My theory is that the mound was built by gradual accretion in the following manner: That when a death occurred a funeral pyre was erected on the mound, upon which the body was placed. That after the body was consumed, any fragments of bones remaining were gathered, placed in a pot, and buried, and that the ashes and cinders were covered by a layer of sand brought from the immediate vicinity for that purpose. This view is further supported by the fact that only the shafts of the long bones are found, the expanded extremities, which would be most easily consumed, having disappeared; also, by the fact that no bones of children were found. Their bones being smaller, and containing a less proportion of earthy matter, would be entirely consumed. * * *

At the Santa Rosa mound the method of burial was different. Here I found the skeletons complete, and obtained nine well-preserved skulls. * * * The bodies were not, apparently, deposited upon any regular system, and I found no objects of interest associated with the remains. It may be that this was due to the fact that the skeletons found were those of warriors who had fallen in battle in which they had sustained defeat. This view is supported by the fact that they were all males, and that two of the skulls bore marks of ante-mortem injuries which must have been of a fatal character.

Writing of the Choctaws, Bartram,* in alluding to the ossuary, or bone-house, mentions that so soon as this is filled a general inhumation takes place, in this manner:

Then the respective coffins are borne by the nearest relatives of the deceased to the place of interment, where they are all piled one upon another in the form of a pyramid, and the conical hill of earth heaped above.

The funeral ceremonies are concluded with the solemnization of a festival called the feast of the dead.

Florian Gianque, of Cincinnati, Ohio, furnishes an account of a somewhat curious mound-burial which had taken place in the Miami Valley of Ohio:

A mound was opened in this locality, some years ago, containing a central corpse in a sitting posture, and over thirty skeletons buried around it in a circle, also in a sitting posture, but leaning against one another, tipped over towards the right, facing inwards. I did not see this opened, but have seen the mounds and many ornaments, awls, &c., said to have been found near the central body. The parties informing me are trustworthy.

As an example of interment, unique, so far as known, and interesting as being *sui generis*, the following description by Dr. J. Mason Spainhour, of Lenoir, N. C., of an excavation made by him March 11, 1871, on the farm of R. V. Michaux, esq., near John's River, in Burke County, N. C., is given. The author bears the reputation of an observer of undoubted integrity, whose facts as given may not be doubted:

EXCAVATION OF AN INDIAN MOUND.

In a conversation with Mr. Michaux on Indian curiosities, he informed me that there was an Indian mound on his farm which was formerly of considerable height,

* Bartram's Travels, 1791, p. 513.

but had gradually been plowed down; that several mounds in the neighborhood had been excavated, and nothing of interest found in them. I asked permission to examine this mound, which was granted, and upon investigation the following facts were revealed:

Upon reaching the place, I sharpened a stick 4 or 5 feet in length and ran it down in the earth at several places, and finally struck a rock about 18 inches below the surface, which, on digging down, was found to be smooth on top, lying horizontally upon solid earth, about 18 inches above the bottom of the grave, 18 inches in length, and 16 inches in width, and from 2 to 3 inches in thickness, with the corners rounded.

Not finding anything under this rock, I then made an excavation in the south of the grave, and soon struck another rock, which, upon examination, proved to be in front of the remains of a human skeleton in a sitting posture. The bones of the fingers of the right hand were resting on this rock, and on the rock near the hand was a small stone about 5 inches long, resembling a tomahawk or Indian hatchet. Upon a further examination many of the bones were found, though in a very decomposed condition, and upon exposure to the air soon crumbled to pieces. The heads of the bones, a considerable portion of the skull, maxillary bones, teeth, neck bones, and the vertebra, were in their proper places, though the weight of the earth above them had driven them down, yet the entire frame was so perfect that it was an easy matter to trace all the bones; the bones of the cranium were slightly inclined toward the east. Around the neck were found coarse beads that seemed to be of some hard substance and resembled chalk. A small lump of red paint about the size of an egg was found near the right side of this skeleton. The sutures of the cranium indicated the subject to have been 25 or 28 years of age, and its top rested about 12 inches below the mark of the plow.

I made a further excavation toward the west of this grave and found another skeleton, similar to the first, in a sitting posture, facing the east. A rock was on the right, on which the bones of the right hand were resting, and on this rock was a tomahawk which had been about 7 inches in length, but was broken into two pieces, and was much better finished than the first. Beads were also around the neck of this one, but were much smaller and of finer quality than those on the neck of the first. The material, however, seems to be the same. A much larger amount of paint was found by the side of this than the first. The bones indicated a person of large frame, who, I think, was about 50 years of age. Everything about this one had the appearance of superiority over the first. The top of the skull was about 6 inches below the mark of the plane.

I continued the examination, and, after diligent search, found nothing at the north side of the grave; but, on reaching the east, found another skeleton, in the same posture as the others, facing the west. On the right side of this was a rock on which the bones of the right hand were resting, and on the rock was also a tomakawk, which had been about 8 inches in length, but was broken into *three* pieces, and was composed of much better material, and better finished than the others. Beads were also found on the neck of this, but much smaller and finer than those of the others. A larger amount of paint than both of the others was found near this one. The top of the cranium had been moved by the plow. The bones indicated a person of 40 years of age.

There was no appearance of hair discovered; besides, the smaller bones were almost entirely decomposed, and would crumble when taken from their bed in the earth. These two circumstances, coupled with the fact that the farm on which this grave was found was the first settled in that part of the country, the date of the first deed made from Lord Granville to John Perkins running back about 150 years (the land still belonging to the descendants of the same family that first occupied it), would prove beyond doubt that it is a very old grave.

The grave was situated due east and west, in size about 9 by 6 feet, the line being distinctly marked by the difference in the color of the soil. It was dug in rich, black

loam, and filled around the bodies with white or yellow sand, which I suppose was carried from the river-bank, 200 yards distant. The skeletons approximated the walls of the grave, and contiguous to them was a dark-colored earth, and so decidedly different was this from all surrounding it, both in quality and odor, that the line of the bodies could be readily traced. The odor of this decomposed earth, which had been flesh, was similar to clotted blood, and would adhere in lumps when compressed in the hand.

This was not the grave of the Indian warriors; in those we find pots made of earth or stone, and all the implements of war, for the warrior had an idea that after he arose from the dead he would need, in the "hunting-grounds beyond," his bow and arrow, war-hatchet, and scalping-knife.

The facts set forth will doubtless convince every Mason who will carefully read the account of this remarkable burial that the American Indians were in posession of at least some of the mysteries of our order, and that it was evidently the grave of Masons, and the three highest officers in a Masonic lodge. The grave was situated due east and west; an altar was erected in the center; the south, west, and east were occupied—*the north was not;* implements of authority were near each body. The difference in the quality of the beads, the tomahawks in one, two, and three pieces, and the difference in distance that the bodies were placed from the surface, indicate beyond doubt that these three persons had been buried by Masons, and those, too, that understood what they were doing.

Will some learned Mason unravel this mystery and inform the Masonic world how the Indians obtained so much Masonic information?

The tomahawks, maxillary bones, some of the teeth, beads, and other bones, have been forwarded to the Smithsonian Institution at Washington, D. C., to be placed among the archives of that institution for exhibition, at which place they may be seen.

Should Dr. Spainhour's inferences be incorrect, there is still a remarkable coincidence of circumstances patent to every Mason.

In support of this gentleman's views, attention is called to the description of the *Midawan*—a ceremony of initiation for would-be medicine men—in Schoolcraft's History of the Indian Tribes of the United States, 1855, p. 428, relating to the Sioux and Chippewas. In this account are found certain forms and resemblances which have led some to believe that the Indians possessed a knowledge of Masonry.

BURIAL BENEATH, OR IN CABINS, WIGWAMS, OR HOUSES.

While there is a certain degree of similitude between the above-noted methods and the one to be mentioned subsequently—*lodge* burial—they differ, inasmuch as the latter are examples of surface or aerial burial, and must consequently fall under another caption. The narratives which are now to be given afford a clear idea of the former kinds of burial.

Bartram* relates the following regarding the Muscogulges of the Carolinas:

The Muscogulges bury their deceased in the earth; they dig a four-foot, square, deep pit under the cabin, or couch which the deceased laid on in his house, lining the grave with cypress bark, when they place the corpse in a sitting posture, as if it were alive, depositing with him his gun, tomahawk, pipe, and such other matters as he

* Bartram's Travels, 1791, p. 515.

had the greatest value for in his lifetime. His eldest wife, or the queen dowager, has the second choice of his possessions, and the remaining effects are divided among his other wives and children.

According to Bernard Roman,* the "funeral customs of the Chickasaws did not differ materially from those of the Muscogulges. They interred the dead as soon as the breath left the body, and beneath the couch in which the deceased expired."

The Navajos of New Mexico and Arizona, a tribe living a considerable distance from the Chickasaws, follow somewhat similar customs, as related by Dr. John Menard, formerly a physician to their agency:

The Navajo custom is to leave the body where it dies, closing up the house or hogan or covering the body with stones or brush. In case the body is removed, it is taken to a cleft in the rocks and thrown in, and stones piled over. The person touching or carrying the body first takes off all his clothes and afterwards washes his body with water before putting them on or mingling with the living. When a body is removed from a house or hogan, the hogan is burned down, and the place in every case abandoned, as the belief is that the devil comes to the place of death and remains where a dead body is. Wild animals frequently (indeed, generally) get the bodies, and it is a very easy matter to pick up skulls and bones around old camping grounds, or where the dead are laid. In case it is not desirable to abandon a place, the sick person is left out in some lone spot protected by brush, where they are either abandoned to their fate or food brought to them until they die. This is done only when all hope is gone. I have found bodies thus left so well inclosed with brush that wild animals were unable to get at them; and one so left to die was revived by a cup of coffee from our house and is still living and well.

Lieut. George E. Ford, Third United States Cavalry, in a personal communication to the writer, corroborates the account given by Dr. Menard, as follows:

This tribe, numbering about 8,000 souls, occupy a reservation in the extreme northwestern corner of New Mexico and Northeastern Arizona. The funeral ceremonies of the Navajos are of the most simple character. They ascribe the death of an individual to the direct action of *Chinde*, or the devil, and believe that he remains in the vicinity of the dead. For this reason, as soon as a member of the tribe dies a shallow grave is dug within the hogan or dwelling by one of the near male relatives, and into this the corpse is unceremoniously tumbled by the relatives, who have previously protected themselves from the evil influence by smearing their naked bodies with tar from the piñon tree. After the body has thus been disposed of, the hogan (composed of logs and branches of trees covered with earth) is pulled down over it and the place deserted. Should the deceased have no near relatives or was of no importance in the tribe, the formality of digging a grave is dispensed with, the hogan being simply leveled over the body. This carelessness does not appear to arise from want of natural affection for the dead, but fear of the evil influence of *Chinde* upon the surviving relatives causes them to avoid doing anything that might gain for them his ill-will. A Navajo would freeze sooner than make a fire of the logs of a fallen hogan, even though from all appearances it may have been years in that condition. There are no mourning observances other than smearing the forehead and under the eyes with tar, which is allowed to remain until worn off, and then not renewed. The deceased is apparently forgotten, as his name is never spoken by the survivors for fear of giving offense to *Chinde*.

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*A Concise Nat. Hist. of East and West Florida, 1775.

J. L. Burchard, agent to the Round Valley Indians of California, furnishes an account of burial somewhat resembling that of the Navajos:

When I first came here the Indians would dig a round hole in the ground, draw up the knees of the deceased Indian, and wrap the body into as small a bulk as possible in blankets, tie them firmly with cords, place them in the grave, throw in beads, baskets, clothing, everything owned by the deceased, and often donating much extra; all gathered around the grave wailing most pitifully, tearing their faces with their nails till the blood would run down their cheeks, pull out their hair, and such other heathenish conduct. These burials were generally made under their thatch houses or very near thereto. The house where one died was always torn down, removed, rebuilt, or abandoned. The wailing, talks, &c., were in their own jargon; none else could understand, and they seemingly knew but little of its meaning (if there was any meaning in it); it simply seemed to be the promptings of grief, without sufficient intelligence to direct any ceremony; each seemed to act out his own impulse.

The next account, taken from M. Butel de Dumont,* relating to the Paskagoulas and Billoxis of Louisiana, may be considered as an example of burial in houses, although the author of the work was pleased to consider the receptacles as temples.

Les Paskagoulas et les Billoxis n'enterent point leur Chef, lorsqu'il est décédé; maisils font sécher son cadavre au feu et à la fumée de façon qu'ils en font un vrai squelette. Après l'avoir réduit en cet état, ils le portent au Temple (car ils en ont un ainsi que les Natchez), et le mettent à la place de son prédécesseur, qu'ils tirent de l'endroit qu'il occupoit, pour le porter avec les corps de leurs autres Chefs dans le fond du Temple où ils sont tous rangés de suite dressés sur leurs pieds comme des statues. A l'égard du dernier mort, il est exposé à l'entrée de ce Temple sur une espèce d'autel ou de table faite de cannes, et couverte d'une natte très-fine travaillée forte proprement en quarreaux rouges et jaunes avec la peau de ces mêmes cannes. Le cadavre du Chef est exposé au milieu de cette table droit sur ses pieds, soutenu par derrière par une longue perche peinte en rouge dont le bout passe au-dessus de sa tête, et à laquelle il est attaché par le milieu du corps avec une liane. D'une main il tient un casse-tête ou une petite hache, de l'autre une pipe; et au-dessus de sa tête est attaché au bout de la perche qui le soutient, le Calumet le plus fameux de tous ceux qui lui ont été présentés pendant sa vie. Du reste cette table n'est guères élevée de terre que d'un demi-pied; mais elle a au moins six pieds de large et dix de longueur.

C'est sur cette table qu'on vient tous les jours servir à manger à ce Chef mort en mettant devant lui des plats de sagamité, du bled grolé ou boucané, &c. C'est-là aussi qu'au commencement de toutes les récoltes ses Sujets vont lui offrir les premiers de tous les fruits qu'ils peuvent recueillier. Tout ce qui lui est présenté de la sorte reste sur cette table; et comme la porte de ce Temple est toujours ouverte, qu'il n'y a personne préposé pour y veiller, que par conséquent y entre qui veut, et que d'ailleurs il est éloigné du Village d'un grand quart de lieue, il arrive que ce sont ordinairement des Etrangers, Chasseurs ou Sauvages, qui profitent de ces mets et de ces fruits, ou qu'ils sont consommés par les animaux. Mais cela est égal à ces sauvages; et moins il en reste lorsqu'ils retournent le lendemain, plus ils sont dans la joie, disant que leur Chef a bien mangé, et que par conséquent il est content d'eux quoiqu'il les ait abandonnés. Pour leur ouvrir les yeux sur l'extravagance de cette pratique, on a beau leur représenter ce qu'ils ne peuvent s'empêcher de voir eux-mêmes, que ce n'est point ce mort qui mange; ils répondent que si ce n'est pas lui, c'est toujours lui au moins qui offre à qui il lui plaît ce qui a été mis sur la table; qu'après tout c'étoit là la pratique de leur père, de leur mère, de leurs parens; qu'ils n'ont pas plus d'esprit qu'eux, et qu'ils ne sauroient mieux faire que de suivre leur example.

C'est aussi devant cette table, que pendant quelques mois la veuve du Chef, ses enfans, ses plus proches parens, viennent de tems en tems lui rendre visite et lui faire

* Mem. Hist. sur la Louisiane, 1753, vol. i, pp. 241-243.

leur harangue, comme s'il étoit en état de les entendre. Les uns lui demandent pourquoi il s'est laissé mourir avant eux? d'autres lui disent que s'il est mort ce n'est point leur faute; que c'est lui même qui s'est tué par telle débauche ou par tel effort; enfin s'il y a eu quelque défaut dans son gouvernement, on prend ce tems-là pour le lui reprocher. Cependant ils finissent toujours leur harangue, en lui disant de n'être pas fâché contre eux, de bien manger, et qu'ils auront toujours bien soin de lui.

Another example of burial in houses may be found in vol. vi of the publications of the Hakluyt Society, 1849, p. 89, taken from Strachey's Virginia. It is given more as a curious narrative of an early writer on American ethnology than for any intrinsic value it may possess as a truthful relation of actual events. It relates to the Indians of Virginia:

Within the chauncell of the temple, by the Okens, are the cenotaphies or the monuments of their kings, whose bodyes, so soon as they be dead, they embowell, and, scraping the flesh from off the bones, they dry the same upon hurdells into ashes, which they put into little potts (like the auncyent urnes): the annathomy of the bones they bind together or case up in leather, hanging bracelettes, or chaines of copper, beads, pearle, or such like, as they used to wear about most of their joints and neck, and so repose the body upon a little scaffold (as upon a tomb), laying by the dead bodies' feet all his riches in severall basketts, his apook, and pipe, and any one toy, which in his life he held most deare in his fancy; their inwards they stuff with pearle, copper, beads, and such trash, sowed in a skynne, which they overlapp againe very carefully in whit skynnes one or two, and the bodyes thus dressed lastly they rowle in matts, as for wynding sheets, and so lay them orderly one by one, as they dye in their turnes, upon an arche standing (as aforesaid) for the tomb, and thes are all the ceremonies we yet can learne that they give unto their dead. We heare of no sweet oyles or oyntments that they use to dresse or chest their dead bodies with; albeit they want not of the pretious rozzin running out of the great cedar, wherewith in the old time they used to embalme dead bodies, washing them in the oyle and licoure thereof. Only to the priests the care of these temples and holy interments are committed, and these temples are to them as solitary Asseteria colledged or ministers to exercise themselves in contemplation, for they are seldome out of them, and therefore often lye in them and maynteyne contynuall fier in the same, upon a hearth somewhat neere the east end.

For their ordinary burialls they digg a deepe hole in the earth with sharpe stakes, and the corps being lapped in skynns and matts with their jewells, they laye uppon sticks in the ground, and soe cover them with earth; the buryall ended, the women (being painted all their faces with black coale and oyle) do sitt twenty-four howers in their howses, mourning and lamenting by turnes, with such yelling and howling as may expresse their great passions.

While this description brings the subject under the head before given —house burial—at the same time it might also afford an example of embalmment or mummifying.

Figure 1 may be referred to as a probable representation of the temple or charnel-house described.

The modes of burial described in the foregoing accounts are not to be considered rare; for among certain tribes in Africa similar practices prevailed. For instance, the Bari of Central Africa, according to the Rev. J. G. Wood,* bury their dead within the inclosure of the homestead, fix a pole in the ground, and fasten to it certain emblems. The Apingi, according to the same author, permit the corpse to remain in its dwelling until it falls to pieces. The bones are then collected and

* Uncivilized Races of the World, 1870, vol i, p. 464.

deposited on the ground a short distance from the village. The Latookas bury within the inclosure of a man's house, although the bones are subsequently removed, placed in an earthen jar, and deposited outside the village. The Kaffirs bury their head-men within the cattle inclosure, the graves of the common people being made outside, and the Bechuanas follow the same general plan.

The following description of Damara burial, from the work quoted above (p. 314), is added as containing an account of certain details which resemble somewhat those followed by North American Indians. In the narrative it will be seen that house burial was followed only if specially desired by the expiring person:

When a Damara chief dies, he is buried in rather a peculiar fashion. As soon as life is extinct—some say even before the last breath is drawn—the bystanders break the spine by a blow from a large stone. They then unwind the long rope that encircles the loins, and lash the body together in a sitting posture, the head being bent over the knees. Ox-hides are then tied over it, and it is buried with its face to the north, as already described when treating of the Bechuanas. Cattle are then slaughtered in honor of the dead chief, and over the grave a post is erected, to which the skulls and hair are attached as a trophy. The bow, arrows, assagai, and clubs of the deceased are hung on the same post. Large stones are pressed into the soil above and around the grave, and a large pile of thorns is also heaped over it, in order to keep off the hyenas, who would be sure to dig up and devour the body before the following day. The grave of a Damara chief is represented on page 302. Now and then a chief orders that his body shall be left in his own house, in which case it is laid on an elevated platform, and a strong fence of thorns and stakes built round the hut.

The funeral ceremonies being completed, the new chief forsakes the place and takes the whole of the people under his command. He remains at a distance for several years, during which time he wears the sign of mourning, *i. e.*, a dark-colored conical cap, and round the neck a thong, to the ends of which are hung two small pieces of ostrich-shell. When the season of mourning is over, the tribe return, headed by the chief, who goes to the grave of his father, kneels over it, and whispers that he has returned, together with the cattle and wives which his father gave him. He then asks for his parent's aid in all his undertakings, and from that moment takes the place which his father filled before him. Cattle are then slaughtered, and a feast held to the memory of the dead chief and in honor of the living one, and each person present partakes of the meat, which is distributed by the chief himself. The deceased chief symbolically partakes of the banquet. A couple of twigs cut from the tree of the particular canda to which the deceased belonged are considered as his representative, and with this emblem each piece of meat is touched before the guests consume it. In like manner, the first pail of milk that is drawn is taken to the grave and poured over it.

CAVE BURIAL.

Natural or artificial holes in the ground, caverns, and fissures in rocks have been used as places of deposit for the dead since the earliest periods of time, and are used up to the present day by not only the American Indians, but by peoples noted for their mental elevation and civilization, our cemeteries furnishing numerous specimens of artificial or partly artificial caves. As to the motives which have actuated this

mode of burial, a discussion would be out of place at this time, except as may incidentally relate to our own Indians, who, so far as can be ascertained, simply adopt caves as ready and convenient resting places for their deceased relatives and friends.

In almost every State in the Union burial caves have been discovered, but as there is more or less of identity between them, a few illustrations will serve the purpose of calling the attention of observers to the subject.

While in the Territory of Utah, in 1872, the writer discovered a natural cave not far from the House Range of mountains, the entrance to which resembled the shaft of a mine. In this the Gosi-Ute Indians had deposited their dead, surrounded with different articles, until it was quite filled up; at least it so appeared from the cursory examination made, limited time preventing a careful exploration. In the fall of the same year another cave was heard of, from an Indian guide, near the Nevada border, in the same Territory, and an attempt made to explore it, which failed for reasons to be subsequently given. This Indian, a Gosi-Ute, who was questioned regarding the funeral ceremonies of his tribe, informed the writer that not far from the very spot where the party were encamped, was a large cave in which he had himself assisted in placing dead members of his tribe. He described it in detail and drew a rough diagram of its position and appearance within. He was asked if an entrance could be effected, and replied that he thought not, as some years previous his people had stopped up the narrow entrance to prevent game from seeking a refuge in its vast vaults, for he asserted that it was so large and extended so far under ground that no man knew its full extent. In consideration, however, of a very liberal bribe, after many refusals, he agreed to act as guide. A rough ride of over an hour and the desired spot was reached. It was found to be almost upon the apex of a small mountain apparently of volcanic origin, for the hole which was pointed out appeared to have been the vent of the crater. This entrance was irregularly circular in form and descended at an angle. As the Indian had stated, it was completely stopped up with large stones and roots of sage brush, and it was only after six hours of uninterrupted, faithful labor that the attempt to explore was abandoned. The guide was asked if many bodies were therein, and replied "Heaps, heaps," moving the hands upwards as far they could be stretched. There is no reason to doubt the accuracy of the information received, as it was voluntarily imparted.

In a communication received from Dr. A. J. McDonald, physician to the Los Pinos Indian Agency, Colorado, a description is given of crevice or rock-fissure burial, which follows:

As soon as death takes place the event is at once announced by the medicine-man, and without loss of time the squaws are busily engaged in preparing the corpse for the grave. This does not take long; whatever articles of clothing may have been on the body at the time of death are not removed. The dead man's limbs are straightened out, his weapons of war laid by his side, and his robes and blankets wrapped securely and snugly around him, and now everything is ready for burial. It is the

custom to secure, if possible, for the purpose of wrapping up the corpse, the robes and blankets in which the Indian died. At the same time that the body is being fitted for interment, the squaws having immediate care of it, together with all the other squaws in the neighborhood, keep up a continued chant or dirge, the dismal cadence of which may, when the congregation of women is large, be heard for quite a long distance. The death song is not a mere inarticulate howl of distress; it embraces expressions eulogistic in character, but whether or not any particular formula of words is adopted on such occasion is a question which I am unable, with the materials at my disposal, to determine witn any degree of certainty.

The next duty falling to the lot of the squaws is that of placing the dead man on a horse and conducting the remains to the spot chosen for burial. This is in the cleft of a rock, and, so far as can be ascertained, it has always been customary among the Utes to select sepulchers of this character. From descriptions given by Mr. Harris, who has several times been fortunate enough to discover remains, it would appear that no superstitious ideas are held by this tribe with respect to the position in which the body is placed, the space accommodation of the sepulcher probably regulating this matter; and from the same source I learn that it is not usual to find the remains of more than one Indian deposited in one grave. After the body has been received into the cleft, it is well covered with pieces of rock, to protect it against the ravages of wild animals. The chant ceases, the squaws disperse, and the burial ceremonies are at an end. The men during all this time have not been idle, though they have in no way participated in the preparation of the body, have not joined the squaws in chanting praises to the memory of the dead, and have not even as mere spectators attended the funeral, yet they have had their duties to perform. In conformity with a long-established custom, all the personal property of the deceased is immediately destroyed. His horses and his cattle are shot, and his wigwam, furniture, &c., burned. The performance of this part of the ceremonies is assigned to the men; a duty quite in accord with their taste and inclinations. Occasionally the destruction of horses and other property is of considerable magnitude, but usually this is not the case, owing to a practice existing with them of distributing their property among their children while they are of a very tender age, retaining to themselves only what is necessary to meet every-day requirements.

The widow "goes into mourning" by smearing her face with a substance composed of pitch and charcoal. The application is made but once, and is allowed to remain on until it wears off. This is the only mourning observance of which I have any knowledge.

The ceremonies observed on the death of a female are the same as those in the case of a male, except that no destruction of property takes place, and of course no weapons are deposited with the corpse. Should a youth die while under the superintendence of white men, the Indians will not as a rule have anything to do with the interment of the body. In a case of the kind which occurred at this agency some time ago, the squaws prepared the body in the usual manner; the men of the tribe selected a spot for the burial, and the employés at the agency, after digging a grave and depositing the corpse therein, filled it up according to the fashion of civilized people, and then at the request of the Indians rolled large fragments of rocks on top. Great anxiety was exhibited by the Indians to have the employés perform the service as expeditiously as possible.

Within the past year Ouray, the Ute chief living at the Los Pinos agency, died and was buried, so far as could be ascertained, in a rock fissure or cave 7 or 8 miles from the agency.

An interesting cave in Calaveras County, California, which had been used for burial purposes, is thus described by Prof. J. D. Whitney:*

The following is an account of the cave from which the skulls, now in the Smithsonian collection, were taken: It is near the Stanislaus River, in Calaveras County, on

*Rep. Smithsonian Inst., 1867, p. 406.

a nameless creek, about two miles from Abbey's Ferry, on the road to Vallicito, at the house of Mr. Robinson. There were two or three persons with me, who had been to the place before and knew that the skulls in question were taken from it. Their visit was some ten years ago, and since that the condition of things in the cave has greatly changed. Owing to some alteration in the road, mining operations, or some other cause which I could not ascertain, there has accumulated on the formerly clean stalagmitic floor of the cave a thickness of some 20 feet of surface earth that completely conceals the bottom, and which could not be removed without considerable expense. This cave is about 27 feet deep at the mouth and 40 to 50 feet at the end, and perhaps 30 feet in diameter. It is the general opinion of those who have noticed this cave and saw it years ago that it was a burying-place of the present Indians. Dr. Jones said he found remains of bows and arrows and charcoal with the skulls he obtained, and which were destroyed at the time the village of Murphy's was burned. All the people spoke of the skulls as lying on the surface and not as buried in the stalagmite.

The next description of cave burial, by W. H. Dall*, is so remarkable that it seems worthy of admittance to this paper. It relates probably to the Innuits of Alaska.

The earliest remains of man found in Alaska up to the time of writing I refer to this epoch [Echinus layer of Dall]. There are some crania found by us in the lowermost part of the Amaknak cave and a cranium obtained at Adakh, near the anchorage in the Bay of Islands. These were deposited in a remarkable manner, precisely similar to that adopted by most of the continental Innuit, but equally different from the modern Aleut fashion. At the Amaknak cave we found what at first appeared to be a wooden inclosure, but which proved to be made of the very much decayed supramaxillary bones of some large cetacean. These were arranged so as to form a rude rectangular inclosure covered over with similar pieces of bone. This was somewhat less than 4 feet long, 2 feet wide, and 18 inches deep. The bottom was formed of flat pieces of stone. Three such were found close together, covered with and filled by an accumulation of fine vegetable and organic mold. In each was the remains of a skeleton in the last stages of decay. It had evidently been tied up in the Innuit fashion to get it into its narrow house, but all the bones, with the exception of the skull, were reduced to a soft paste, or even entirely gone. At Adakh a fancy prompted me to dig into a small knoll near the ancient shell-heap, and here we found, in a precisely similar sarcophagus, the remains of a skeleton, of which also only the cranium retained sufficient consistency to admit of preservation. This inclosure, however, was filled with a dense peaty mass not reduced to mold, the result of centuries of sphagnous growth, which had reached a thickness of nearly 2 feet above the remains. When we reflect upon the well-known slowness of this kind of growth in these northern regions, attested by numerous Arctic travelers, the antiquity of the remains becomes evident.

It seems beyond doubt that in the majority of cases, especially as regards the caves of the Western States and Territories, the interments were primary ones, and this is likewise true of many of the caverns of Ohio, Indiana, and Kentucky, for in the three States mentioned many mummies have been found, but it is also likely that such receptacles were largely used as places of secondary deposits. The many fragmentary skeletons and loose bones found seem to strengthen this view.

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9 A E *Contrib. to N. A. Ethnol., 1877, vol. 1, p. 62.

EMBALMMENT OR MUMMIFICATION.

Following and in connection with cave burial, the subject of mummifying or embalming the dead may be taken up, as most specimens of the kind have generally been found in such repositories.

It might be both interesting and instructive to search out and discuss the causes which have led many nations or tribes to adopt certain processes with a view to prevent that return to dust which all flesh must sooner or later experience, but the necessarily limited scope of this work precludes more than a brief mention of certain theories advanced by writers of note, and which relate to the ancient Egyptians. Possibly at the time the Indians of America sought to preserve their dead from decomposition, some such ideas may have animated them, but on this point no definite information has been procured. In the final volume an effort will be made to trace out the origin of mummification among the Indians and aborigines of this continent.

The Egyptians embalmed, according to Cassien, because during the time of the annual inundation no interments could take place, but it is more than likely that this hypothesis is entirely fanciful. It is said by others they believed that so long as the body was preserved from corruption the soul remained in it. Herodotus states that it was to prevent bodies from becoming a prey to animal voracity. "They did not inter them," says he, "for fear of their being eaten by worms; nor did they burn, considering fire as a ferocious beast, devouring everything which it touched." According to Diodorus of Sicily, embalmment originated in filial piety and respect. De Maillet, however, in his tenth letter on Egypt, attributes it entirely to a religious belief, insisted upon by the wise men and priests, who taught their disciples that after a certain number of cycles, of perhaps thirty or forty thousand years, the entire universe became as it was at birth, and the souls of the dead returned into the same bodies in which they had lived, provided that the body remained free from corruption, and that sacrifices were freely offered as oblations to the manes of the deceased. Considering the great care taken to preserve the dead, and the ponderously solid nature of the Egyptian tombs, it is not surprising that this theory has obtained many believers. M. Gannal believes embalmment to have been suggested by the affectionate sentiments of our nature—a desire to preserve as long as possible the mortal remains of loved ones; but MM. Volney and Pariset think it was intended to obviate, in hot climates especially, danger from pestilence, being primarily a cheap and simple process, elegance and luxury coming later; and the Count de Caylus states the idea of embalmment was derived from the finding of desiccated bodies which the burning sands of Egypt had hardened and preserved. Many other suppositions have arisen, but it is thought the few given above are sufficient to serve as an introduction to embalmment in North America.

From the statements of the older writers on North American Indians, it appears that mummifying was resorted to, among certain tribes of Virginia, the Carolinas, and Florida, especially for people of distinction, the process in Virginia for the kings, according to Beverly,* being as follows:

The *Indians* are religious in preserving the Corpses of their Kings and Rulers after Death, which they order in the following manner: First, they neatly flay off the Skin as entire as they can, slitting it only in the Back; then they pick all the Flesh off from the Bones as clean as possible, leaving the Sinews fastned to the Bones, that they may preserve the Joints together; then they dry the Bones in the Sun, and put them into the Skin again, which in the mean time has been kept from drying or shrinking; when the Bones are placed right in the Skin, they nicely fill up the Vacuities, with a very fine white Sand. After this they sew up the Skin again, and the Body looks as if the Flesh had not been removed. They take care to keep the Skin from shrinking, by the help of a little Oil or Grease, which saves it also from Corruption. The Skin being thus prepar'd, they lay it in an apartment for that purpose, upon a large Shelf rais'd above the Floor. This Shelf is spread with Mats, for the Corpse to rest easy on, and skreened with the same, to keep it from the Dust. The Flesh they lay upon Hurdles in the Sun to dry, and when it is thoroughly dried, it is sewed up in a Basket, and set at the Feet of the Corpse, to which it belongs. In this place also they set up a *Quioccos*, or Idol, which they believe will be a Guard to the Corpse. Here Night and Day one or the other of the Priests must give his Attendance, to take care of the dead Bodies. So great an Honour and Veneration have these ignorant and unpolisht People for their Princes even after they are dead.

It should be added that, in the writer's opinion, this account and others like it are somewhat apocryphal, and it has been copied and recopied a score of times.

According to Pinkerton,† who took the account from Smith's Virginia, the Werowance of Virginia preserved their dead as follows:

In their Temples they have his [their chief God, the Devil's] image euill favouredly carved, and then painted and adorned with chaines of copper, and beads, and covered with a skin, in such manner as the deformitie may well suit with such a God. By him is commonly the sepulchre of their Kings. Their bodies are first bowelled, then dried upon hurdles till they be very dry, and so about the most of their ioynts and necke they haug bracelets, or chaines of copper, pearle, and such like, as they vse to wear. Their inwards they stuffe with copper beads, hatchets, and such trash. Then lappe they them very carefully in white skins, and so rowle them in mats for their winding-sheets. And in the Tombe, which is an arch made of mats, they lay them orderly. What remaineth of this kind of wealth their Kings have, they set at their feet in baskets. These temples and bodies are kept by their Priests.

For their ordinary burials, they dig a deepe hole in the earth with sharpe stakes, and the corpse being lapped in skins and mats with their jewels they lay them vpon sticks in the ground, and so cover them with earth. The buriale ended, the women being painted all their faces with blacke cole and oyle doe sit twenty-foure houres in the houses mourning and lamenting by turnes with such yelling and howling as may expresse their great passions. * * *

Upon the top of certain red sandy hills in the woods there are three great houses filled with images of their Kings and devils and the tombes of their predecessors. Those houses are near sixty feet in length, built harbourwise after their building. This place they count so holey as that but the priests and Kings dare come into them; nor the savages dare not go up the river in boates by it, but that they solemnly cast

* Hist. of Virginia, 1722, p. 185.

† Collection of Voyages, 1812, vol. xiii, p. 39.

some piece of copper, white beads, or pocones into the river for feare their Okee should be offended and revenged of them.

They think that their Werowances and priests which they also esteeme quiyoughcosughs, when they are deade doe goe beyond the mountains towards the setting of the sun, and ever remain there in form of their Okee, with their hedes paynted rede with oyle and pocones, finely trimmed with feathers, and shall have beads, hatchets, copper, and tobacco, doing nothing but dance and sing with all their predecessors. But the common people they suppose shall not live after deth, but rot in their graves like dede dogges.

This is substantially the same account as has been given on a former page, the verbiage differing slightly, and the remark regarding truthfulness will apply to it as well as to the other.

Figure 1 may again be referred to as an example of the dead-house described.

The Congaree or Santee Indians of South Carolina, according to Lawson, used a process of partial embalmment, as will be seen from the subjoined extract from Schoolcraft;* but instead of laying away the remains in caves, placed them in boxes supported above the ground by crotched sticks.

The manner of their interment is thus: A mole or pyramid of earth is raised, the mould thereof being worked very smooth and even, sometimes higher or lower according to the dignity of the person whose monument it is. On the top thereof is an umbrella, made ridgeways, like the roof of a house. This is supported by nine stakes or small posts, the grave being about 6 to 8 feet in length and 4 feet in breadth, about which is hung gourds, feathers, and other such like trophies, placed there by the dead man's relations in respect to him in the grave. The other parts of the funeral rites are thus: As soon as the party is dead they lay the corpse upon a piece of bark in the sun, seasoning or embalming it with a small root beaten to powder, which looks as red as vermillion; the same is mixed with bear's oil to beautify the hair. After the carcass has laid a day or two in the sun they remove it and lay it upon crotches cut on purpose for the support thereof from the earth; then they anoint it all over with the aforementioned ingredients of the powder of this root and bear's oil. When it is so done they cover it over very exactly with the bark or pine of the cypress tree to prevent any rain to fall upon it, sweeping the ground very clean all about it. Some of his nearest of kin brings all the temporal estate he was possessed of at his death, as guns, bows and arrows, beads, feathers, match-coat, &c. This relation is the chief mourner, being clad in moss, with a stick in his hand, keeping a mournful ditty for three or four days, his face being black with the smoke of pitch-pine mixed with bear's oil. All the while he tells the dead man's relations and the rest of the spectators who that dead person was, and of the great feats performed in his lifetime, all that he speaks tending to the praise of the defunct. As soon as the flesh grows mellow and will cleave from the bone they get it off and burn it, making the bones very clean, then anoint them with the ingredients aforesaid, wrapping up the skull (very carefully) in a cloth artificially woven of opossum's hair. The bones they carefully preserve in a wooden box, every year oiling and cleansing them. By these means they preserve them for many ages, that you may see an Indian in possession of the bones of his grandfather or some of his relations of a longer antiquity. They have other sorts of tombs, as when an Indian is slain in that very place they make a heap of stones (or sticks where stones are not to be found); to this memorial every Indian that passes by adds a stone to augment the heap in respect to the deceased hero. The Indians make a roof of light wood or

* Hist. Ind. Tribes United States, 1854, Part IV, pp. 155 *et seq.*

pitch-pine over the graves of the more distinguished, covering it with bark and then with earth, leaving the body thus in a subterranean vault until the flesh quits the bones. The bones are then taken up, cleaned, jointed, clad in white-dressed deer-skins, and laid away in the *Quiogozon*, which is the royal tomb or burial-place of their kings and war-captains, being a more magnificent cabin reared at the public expense. This Quiogozon is an object of veneration, in which the writer says he has known the king, old men, and conjurers to spend several days with their idols and dead kings, and into which he could never gain admittance.

Another class of mummies are those which have been found in the saltpetre and other caves of Kentucky, and it is still a matter of doubt with archæologists whether any special pains were taken to preserve these bodies, many believing that the impregnation of the soil with certain minerals would account for the condition in which the specimens were found. Charles Wilkins* thus describes one:

* * * An exsiccated body of a female * * * was found at the depth of about 10 feet from the surface of the cave bedded in clay strongly impregnated with nitre, placed in a sitting posture, incased in broad stones standing on their edges, with a flat stone covering the whole. It was enveloped in coarse clothes, * * * the whole wrapped in deer-skins, the hair of which was shaved off in the manner in which the Indians prepare them for market. Enclosed in the stone coffin were the working utensils, beads, feathers, and other ornaments of dress which belonged to her.

The next description is by Dr. Samuel L. Mitchill.†

AUG. 24TH, 1815.

DEAR SIR: I offer you some observations on a curious piece of American antiquity now in New York. It is a human body‡ found in one of the limestone caverns of Kentucky. It is a perfect exsiccation; all the fluids are dried up. The skin, bones, and other firm parts are in a state of entire preservation. I think it enough to have puzzled Bryant and all the archæologists.

This was found in exploring a calcareous cave in the neighborhood of Glasgow for saltpetre.

These recesses, though under ground, are yet dry enough to attract and retain the nitrick acid. It combines with lime and potash; and probably the earthy matter of these excavations contains a good proportion of calcareous carbonate. Amidst these drying and antiseptick ingredients, it may be conceived that putrefaction would be stayed, and the solids preserved from decay. The outer envelope of the body is a deer-skin, probably dried in the usual way, and perhaps softened before its application by rubbing. The next covering is a deer's skin, whose hair had been cut away by a sharp instrument resembling a hatter's knife. The remnant of the hair and the gashes in the skin nearly resemble a sheared pelt of beaver. The next wrapper is of cloth made of twine doubled and twisted. But the thread does not appear to have been formed by the wheel, nor the web by the loom. The warp and filling seem to have been crossed and knotted by an operation like that of the fabricks of the north-west coast, and of the Sandwich Islands. Such a botanist as the lamented Muhlenburgh could determine the plant which furnished the fibrous material.

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* Trans. Amer. Antiq. Soc., 1820, vol. 1, p. 360.

† Letter to Samuel M. Burnside, in Trans. and Coll. Amer. Antiq. Soc., 1820, vol. 1, p. 318.

‡ A mummy of this kind, of a person of mature age, discovered in Kentucky, is now in the cabinet of the American Antiquarian Society. It is a female. Several human bodies were found enwrapped carefully in skins and cloths. They were inhumed below the floor of the cave; *inhumed*, and not lodged in catacombs.

The innermost tegument is a mantle of cloth, like the preceding, but furnished with large brown feathers, arranged and fashioned with great art, so as to be capable of guarding the living wearer from wet and cold. The plumage is distinct and entire, and the whole bears a near similitude to the feathery cloaks now worn by the nations of the northwestern coast of America. A Wilson might tell from what bird they were derived.

The body is in a squatting posture, with the right arm reclining forward, and its hand encircling the right leg. The left arm hangs down, with its hand inclined partly under the seat. The individual, who was a male, did not probably exceed the age of fourteen at his death. There is near the occiput a deep and extensive fracture of the skull, which probably killed him. The skin has sustained little injury; it is of a dusky colour, but the natural hue cannot be decided with exactness, from its present appearance. The scalp, with small exceptions, is covered with sorrel or foxey hair. The teeth are white and sound. The hands and feet, in their shrivelled state, are slender and delicate. All this is worthy the investigation of our acute and perspicacious colleague, Dr. Holmes.

There is nothing bituminous or aromatic in or about the body, like the Egyptian mummies, nor are there bandages around any part. Except the several wrappers, the body is totally naked. There is no sign of a suture or incision about the belly; whence it seems that the viscera were not removed.

It may now be expected that I should offer some opinion as to the antiquity and race of this singular exsiccation.

First, then, I am satisfied that it does not belong to that class of white men of which we are members.

2dly. Nor do I believe that it ought to be referred to the bands of Spanish adventurers, who, between the years 1500 and 1600, rambled up the Mississippi, and along its tributary streams. But on this head I should like to know the opinion of my learned and sagacious friend, Noah Webster.

3dly. I am equally obliged to reject the opinion that it belonged to any of the tribes of aborigines, now or lately inhabiting Kentucky.

4thly. The mantle of the feathered work, and the mantle of twisted threads, so nearly resemble the fabricks of the indigines of Wakash and the Pacifick Islands, that I refer this individual to that era of time, and that generation of men, which preceded the Indians of the Green River, and of the place where these relicks were found. This conclusion is strengthened by the consideration that such manufactures are not prepared by the actual and resident red men of the present day. If the Abbe Clavigero had had this case before him, he would have thought of the people who constructed those ancient forts and mounds, whose exact history no man living can give. But I forbear to enlarge; my intention being merely to manifest my respect to the society for having enrolled me among its members, and to invite the attention of its Antiquarians to further inquiry on a subject of such curiosity.

With respect, I remain yours,

SAMUEL L. MITCHILL.

It would appear, from recent researches on the Northwest coast, that the natives of that region embalmed their dead with much care, as may be seen from the work recently published by W. H. Dall,* the description of the mummies being as follows:

We found the dead disposed of in various ways; first, by interment in their compartments of the communal dwelling, as already described; second, by being laid on a rude platform of drift-wood or stones in some convenient rock shelter. These lay on straw and moss, covered by matting, and rarely have either implements, weapons, or carvings associated with them. We found only three or four specimens in all in

* Cont. to N. A. Ethnol., 1877, vol. i, p. 89.

T. Sinclair & Son, Sc. Phila.

Fig. 5. ALASKAN MUMMIES.

these places, of which we examined a great number. This was apparently the more ancient form of disposing of the dead, and one which more recently was still pursued in the case of poor or unpopular individuals.

Lastly, in comparatively modern times, probably within a few centuries, and up to the historic period (1740), another mode was adopted for the wealthy, popular, or more distinguished class. The bodies were eviscerated, cleansed from fatty matters in running water, dried, and usually placed in suitable cases in wrappings of fur and fine grass matting. The body was usually doubled up into the smallest compass, and the mummy case, especially in the case of children, was usually suspended (so as not to touch the ground) in some convenient rock shelter. Sometimes, however, the prepared body was placed in a lifelike position, dressed and armed. They were placed as if engaged in some congenial occupation, such as hunting, fishing, sewing, &c. With them were also placed effigies of the animals they were pursuing, while the hunter was dressed in his wooden armor and provided with an enormous mask all ornamented with feathers, and a countless variety of wooden pendants, colored in gay patterns. All the carvings were of wood, the weapons even were only fac-similes in wood of the original articles. Among the articles represented were drums, rattles, dishes, weapons, effigies of men, birds, fish, and animals, wooden armor of rods or scales of wood, and remarkable masks, so arranged that the wearer when erect could only see the ground at his feet. These were worn at their religious dances from an idea that a spirit which was supposed to animate a temporary idol was fatal to whoever might look upon it while so occupied. An extension of the same idea led to the masking of those who had gone into the land of spirits.

The practice of preserving the bodies of those belonging to the whaling class—a custom peculiar to the Kadiak Innuit—has erroneously been confounded with the one now described. The latter included women as well as men, and all those whom the living desired particularly to honor. The whalers, however, only preserved the bodies of males, and they were not associated with the paraphernalia of those I have described. Indeed, the observations I have been able to make show the bodies of the whalers to have been preserved with stone weapons and actual utensils instead of effigies, and with the meanest apparel, and no carvings of consequence. These details, and those of many other customs and usages of which the shell heaps bear no testimony * * * do not come within my line.

Figure 5, copied from Dall, represents the Alaskan mummies.

Martin Sauer, secretary to Billings' Expedition,* speaks of the Aleutian Islanders embalming their dead, as follows:

They pay respect, however, to the memory of the dead, for they embalm the bodies of the men with dried moss and grass; bury them in their best attire, in a sitting posture, in a strong box, with their darts and instruments; and decorate the tomb with various coloured mats, embroidery, and paintings. With women, indeed, they use less ceremony. A mother will keep a dead child thus embalmed in their hut for some months, constantly wiping it dry; and they bury it when it begins to smell, or when they get reconciled to parting with it.

Regarding these same people, a writer in the San Francisco Bulletin gives this account:

The schooner William Sutton, belonging to the Alaska Commercial Company, has arrived from the seal islands of the company with the mummified remains of Indians who lived on an island north of Ounalaska one hundred and fifty years ago. This contribution to science was secured by Captain Henning, an agent of the company who has long resided at Ounalaska. In his tranactions with the Indians he learned

* Billings' Exped., 1802, p. 161.

that tradition among the Aleuts assigned Kagamale, the island in question, as the last resting-place of a great chief, known as Karkhayahouchak. Last year the captain was in the neighborhood of Kagamale in quest of sea-otter and other furs, and he bore up for the island, with the intention of testing the truth of the tradition he had heard. He had more difficulty in entering the cave than in finding it, his schooner having to beat on and off shore for three days. Finally he succeeded in affecting a landing, and clambering up the rocks he found himself in the presence of the dead chief, his family and relatives.

The cave smelt strongly of hot sulphurous vapors. With great care the mummies were removed, and all the little trinkets and ornaments scattered around were also taken away.

In all there are eleven packages of bodies. Only two or three have as yet been opened. The body of the chief is inclosed in a large basket-like structure, about four feet in height. Outside the wrappings are finely wrought sea-grass matting, exquisitely close in texture, and skins. At the bottom is a broad hoop or basket of thinly cut wood, and adjoining the center portions are pieces of body armor composed of reeds bound together. The body is covered with the fine skin of the sea-otter, always a mark of distinction in the interments of the Aleuts, and round the whole package are stretched the meshes of a fish-net, made of the sinews of the sea lion; also those of a bird-net. There are evidently some bulky articles inclosed with the chief's body, and the whole package differs very much from the others, which more resemble, in their brown-grass matting, consignments of crude sugar from the Sandwich Islands than the remains of human beings. The bodies of a pappoose and of a very little child, which probably died at birth or soon after it, have sea-otter skins around them. One of the feet of the latter projects, with a toe-nail visible. The remaining mummies are of adults.

One of the packages has been opened, and it reveals a man's body in tolerable preservation, but with a large portion of the face decomposed. This and the other bodies were doubled up at death by severing some of the muscles at the hip and knee joints and bending the limbs downward horizontally upon the trunk. Perhaps the most peculiar package, next to that of the chief, is one which incloses in a single matting, with sea-lion skins, the bodies of a man and woman. The collection also embraces a couple of skulls, male and female, which have still the hair attached to the scalp. The hair has changed its color to a brownish red. The relics obtained with the bodies include a few wooden vessels scooped out smoothly; a piece of dark, greenish, flat stone, harder than the emerald, which the Indians use to tan skins; a scalp-lock of jet-black hair; a small rude figure, which may have been a very ugly doll or an idol; two or three tiny carvings in ivory of the sea-lion, very neatly executed; a comb, a necklet made of bird's claws inserted into one another, and several specimens of little bags, and a cap plaited out of sea-grass and almost water-tight.

In Cary's translation of Herodotus (1853, p. 180) the following passage occurs which purports to describe the manner in which the Macrobrian Ethiopians preserved their dead. It is added, simply as a matter of curious interest, nothing more, for no remains so preserved have ever been discovered.

After this, they visited last of all their sepulchres, which are said to be prepared from crystal in the following manner. When they have dried the body, either as the Egyptians do, or in some other way, they plaster it all over with gypsum, and paint it, making it as much as possible resemble real life; they then put round it a hollow column made of crystal, which they dig up in abundance, and is easily wrought. The body being in the middle of the column is plainly seen, nor does it emit an unpleasant smell, nor is it in any way offensive, and it is all visible as the body itself. The nearest relations keep the column in their houses for a year, offering to it the first-

fruits of all, and performing sacrifices; after that time they carry it out and place it somewhere near the city.

NOTE.—The Egyptian mummies could only be seen in front, the back being covered by a box or coffin; the Ethiopian bodies could be seen all round, as the column of glass was transparent.

With the foregoing examples as illustration, the matter of embalmment may be for the present dismissed, with the advice to observers that particular care should be taken, in case mummies are discovered, to ascertain whether the bodies have been submitted to a regular preservative process, or owe their protection to ingredients in the soil of their graves or to desiccation in arid districts.

URN-BURIAL.

To close the subject of subterranean burial proper, the following account of urn-burial in Foster * may be added:

Urn-burial appears to have been practiced to some extent by the mound-builders, particularly in some of the Southern States. In the mounds on the Wateree River, near Camden, S. C., according to Dr. Blanding, ranges of vases, one above the other, filled with human remains, were found. Sometimes when the mouth of the vase is small the skull is placed with the face downward in the opening, constituting a sort of cover. Entire cemeteries have been found in which urn-burial alone seems to have been practiced. Such a one was accidentally discovered not many years since in Saint Catherine's Island, on the coast of Georgia. Professor Swallow informs me that from a mound at New Madrid, Mo., he obtained a human skull inclosed in an earthen jar, the lips of which were too small to admit of its extraction. It must therefore have been molded on the head after death.

A similar mode of burial was practiced by the Chaldeans, where the funeral jars often contain a human cranium much too expanded to admit of the possibility of its passing out of it, so that either the clay must have been modeled over the corpse, and then baked, or the neck of the jar must have been added subsequently to the other rites of interment.†

It is with regret that the writer feels obliged to differ from the distinguished author of the work quoted regarding urn-burial, for notwithstanding that it has been employed by some of the Central and Southern American tribes, it is not believed to have been customary, but *to a very limited extent*, in North America, except as a secondary interment. He must admit that he himself has found bones in urns or ollas in the graves of New Mexico and California, but under circumstances that would seem to indicate a deposition long subsequent to death. In the graves of the ancient peoples of California a number of ollas were found in long-used burying places, and it is probable that as the bones were dug up time and again for new burials they were simply tossed into pots, which were convenient receptacles, or it may have been that bodies

* Pre-historic Races, 1873, p. 199.

† Rawlinson's Herodotus, Book i, chap. 198, *note*.

were allowed to repose in the earth long enough for the fleshy parts to decay, and the bones were then collected, placed in urns, and reinterred. Dr. E. Foreman, of the Smithsonian Institution, furnishes the following account of urns used for burial:

I would call your attention to an earthenware burial-urn and cover, Nos. 27976 and 27977, National Museum, but very recently received from Mr. William McKinley, of Milledgeville, Ga. It was exhumed on his plantation, ten miles below that city, on the bottom lands of the Oconee River, now covered with almost impassible canebrakes, tall grasses, and briers. We had a few months ago from the same source one of the covers, of which the ornamentation was different but more entire. A portion of a similar cover has been received also from Chattanooga, Tenn. Mr. McKinley ascribes the use of these urns and covers to the Muscogees, a branch of the Creek Nation.

These urns are made of baked clay, and are shaped somewhat like the ordinary steatite ollas found in the California coast graves, but the bottoms instead of being round run down to a sharp apex; on the top was a cover, the upper part of which also terminated in an apex, and around the border, near where it rested on the edge of the vessel, are indented scroll ornamentations.

The burial-urns of New Mexico are thus described by E. A. Barber:*

Burial-urns * * * comprise vessels or ollas without handles, for cremation, usually being from 10 to 15 inches in height, with broad, open mouths, and made of coarse clay, with a laminated exterior (partially or entirely ornamented). Frequently the indentations extend simply around the neck or rim, the lower portion being plain.

So far as is known, up to the present time no burial-urns have been found in North America resembling those discovered in Nicaragua by Dr. J. C. Bransford, U. S. N., but it is quite within the range of possibility that future researches in regions not far distant from that which he explored may reveal similar treasures. Figure 6 represents different forms of burial-urns. *a*, *b*, and *e*, after Foster, are from Laporte, Ind. *f*, after Foster, is from Greenup County, Kentucky; *d* is from Milledgeville, Ga., in Smithsonian collection, No. 27976; and *c* is one of the peculiar shoe-shaped urns brought from Ometepec Island, Lake Nicaragua, by Surgeon J. C. Bransford, U. S. N.

SURFACE BURIAL.

This mode of interment was practiced to only a limited extent, so far as can be discovered, and it is quite probable that in most cases it was employed as a temporary expedient when the survivors were pressed for time. The Seminoles of Florida are said to have buried in hollow trees, the bodies being placed in an upright position, occasionally the dead being crammed into a hollow log lying on the ground. With some of the Eastern tribes a log was split in half and hollowed out suffi-

* Amer. Naturalist, 1876, vol. x, p. 455 *et seq.*

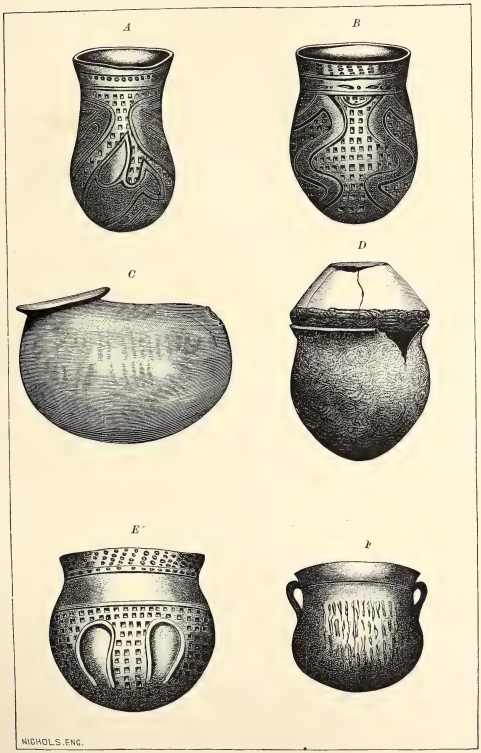

FIG. 6.—Burial Urns.

Fig 7 INDIAN CEMETERY

ciently large to contain the corpse; it was then lashed together with withes and permitted to remain where it was originally placed. In some cases a pen was built over and around it. This statement is corroborated by R. S. Robertson, of Fort Wayne, Ind., who states, in a communication received in 1877, that the Miamis practiced surface burial in two different ways:

* * * 1st. The surface burial in hollow logs. These have been found in heavy forests. Sometimes a tree has been split and the two halves hollowed out to receive the body, when it was either closed with withes or confined to the ground with crossed stakes; and sometimes a hollow tree is used by closing the ends.

2d. Surface burial where the body was covered by a small pen of logs laid up as we build a cabin, but drawing in every course until they meet in a single log at the top.

The writer has recently received from Prof. C. Engelhardt, of Copenhagen, Denmark, a brochure describing the oak coffins of Borum-Æshœi. From an engraving in this volume it would appear that the manner employed by the ancient Danes of hollowing out logs for coffins has its analogy among the North American Indians.

Romantically conceived, and carried out to the fullest possible extent in accordance with the *ante mortem* wishes of the dead, were the obsequies of Blackbird, the great chief of the Omahas. The account is given by George Catlin:*

He requested them to take his body down the river to this his favorite haunt, and on the pinnacle of this towering bluff to bury him on the back of his favorite war-horse, which was to be buried alive under him, from whence he could see, as he said, "the Frenchmen passing up and down the river in their boats." He owned, amongst many horses, a noble white steed, that was led to the top of the grass-covered hill, and with great pomp and ceremony, in the presence of the whole nation and several of the fur-traders and the Indian agent, he was placed astride of his horse's back, with his bow in his hand, and his shield and quiver slung, with his pipe and his medicine bag, with his supply of dried meat, and his tobacco-pouch replenished to last him through the journey to the beautiful hunting grounds of the shades of his fathers, with his flint, his steel, and his tinder to light his pipe by the way; the scalps he had taken from his enemies' heads could be trophies for nobody else, and were hung to the bridle of his horse. He was in full dress, and fully equipped, and on his head waved to the last moment his beautiful head-dress of the war-eagles' plumes. In this plight, and the last funeral honors having been performed by the medicine-men, every warrior of his band painted the palm and fingers of his right hand with vermillion, which was stamped and perfectly impressed on the milk-white sides of his devoted horse. This all done, turfs were brought and placed around the feet and legs of the horse, and gradually laid up to its sides, and at last over the back and head of the unsuspecting animal, and last of all over the head and even the eagle plumes of its valiant rider, where all together have smouldered and remained undisturbed to the present day.

Figure 7, after Schoolcraft, represents an Indian burial-ground on a high bluff of the Missouri River.

According to the Rev. J. G. Wood,† the Obongo, an African tribe,

*Manners, Customs, &c., of North American Indians, 1844, vol. ii, p. 5.

†Uncivilized Races of the World, 1870, vol. i, p. 483.

buried their dead in a manner similar to that which has been stated of the Seminoles:

When an Obongo dies it is usual to take the body to a hollow tree in the forest and drop it into the hollow, which is afterwards filled to the top with earth, leaves, and branches.

M. de la Potherie* gives an account of surface burial as practiced by the Iroquois of New York:

Quand ce malade est mort, on le met sur son séant, on oint ses cheveux et tout son corps d'huile d'animaux, on lui applique du vermillon sur le visage; on lui met toutes sortes de beaux plumages de la rassade de la porcelaine et on le pare des plus beaux habits que l'on peut trouver, pendant que les parens et ces vieilles continuent toujours à pleurer. Cette cérémonie finie, les alliez apportent plusieurs présens. Les uns sont pour essuyer les larmes et les autres pour servir des matelas au défunt, on en destine certains pour couvrir la fosse, de peur, disent-ils, que la plague ne l'incommode, on y étend fort proprement des peaux d'ours et de chevreuils qui lui servent de lit, et on lui met ses ajustemens avec un sac de farine de bled d'Inde, de la viande, sa cuillière, et généralement tout ce qu'il faut à un homme qui veut faire un long voyage, avec tous les présens qui lui ont été faits à sa mort, et s'il a été guerrier on lui donne ses armes pour s'en servir au païs des morts. L'on couvre ensuite ce cadavre d'écorce d'arbres, sur lesquelles on jette de la terre et quantité de pierres, et on l'entoure de pierres pour empêcher que les animaux ne le déterrent. Ces sortes de funérailles ne se font que dans leur village. Lorsqu'ils meurent en campagne on les met dans un cercueil d'écorce, entre les branches des arbres où on les élève sur quatre pilliers.

On observe ces mêmes funérailles aux femmes et aux filles. Tous ceux qui ont assisté aux obsèques profitent de toute la dépoüille du défunt et s'il n'avoit rien, les parens y supléent. Ainsi ils ne pleurent pas en vain. Le deüil consiste à ne se point couper ni graisser les cheveux et de se tenir négligé sans aucune parure, couverts de méchantes hardes. Le père et la mère portent le deüil de leur fils. Si le père meurt les garçons le portent, et les filles de leur mère.

Dr. P. Gregg, of Rock Island, Illinois, has been kind enough to forward to the writer an interesting work by J. W. Spencer,† containing annotations by himself. He gives the following account of surface and partial surface burial occurring among the Sacs and Foxes formerly inhabiting Illinois:

Black Hawk was placed upon the ground in a sitting posture, his hands grasping his cane. They usually made a shallow hole in the ground, setting the body in up to the waist, so the most of the body was above ground. The part above ground was then covered by a buffalo robe, and a trench about eight feet square was then dug about the grave. In this trench they set picketing about eight feet high, which secured the grave against wild animals. When I first came here there were quite a number of these high picketings still standing where their chiefs had been buried, and the body of a chief was disposed of in this way while I lived near their village. The common mode of burial was to dig a shallow grave, wrap the body in a blanket, place it in the grave, and fill it nearly full of dirt; then take split sticks about three feet long and stand them in the grave so that their tops would come together in the form of a roof; then they filled in more earth so as to hold the sticks in place. I saw a father and mother start out alone to bury their child about a year old; they carried it by tieing it up in a blanket and putting a long stick through the blanket, each taking an end of the stick.

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* Hist. de l'Amérique Septentrionale, 1753, tome ii, p. 43.

† Pioneer Life, 1872.

Fig. 8.—Grave Pen.

Fig. 9.—Grave Pen.

I have also seen the dead bodies placed in trees. This is done by digging a trough out of a log, placing the body in it, and covering it. I have seen several bodies in one tree. I think when they are disposed of in this way it is by special request, as I knew of an Indian woman who lived with a white family who desired her body placed in a tree, which was accordingly done.* Doubtless there was some peculiar superstition attached to this mode, though I do not remember to have heard what it was.

Judge H. Welch† states that "the Sauks, Foxes, and Pottawatomies buried by setting the body on the ground and building a pen around it of sticks or logs. I think the bodies lay heads to the east." And C. C. Baldwin, of Cleveland, Ohio, sends a more detailed account, as follows:

I was some time since in Seneca County and there met Judge Welch. * * * In 1824 he went with his father-in-law, Judge Gibson, to Fort Wayne. On the way they passed the grave of an Ottawa or Pottawatomie chief. The body lay on the ground covered with notched poles. It had been there but a few days and the worms were crawling around the body. My special interest in the case was the accusation of witchcraft against a young squaw who was executed for killing him by her arts. In the Summit County mounds there were only parts of skeletons with charcoal and ashes, showing they had been burned.

W. A. Brice‡ mentions a curious variety of surface burial not heretofore met with:

And often had been seen, years ago, swinging from the bough of a tree, or in a hammock stretched between two trees, the infant of the Indian mother; or a few little log inclosures, where the bodies of adults sat upright, with all their former apparel wrapped about them, and their trinkets, tomahawks, &c., by their side, could be seen at any time for many years by the few pale-faces visiting or sojourning here.

A method of interment so closely allied to surface burial that it may be considered under that head is the one employed by some of the Ojibways and Swampy Crees of Canada. A small cavity is scooped out, the body deposited therein, covered with a little dirt, the mound thus formed being covered either with split planks, poles, or birch bark.

Prof. Henry Youle Hind, who was in charge of the Canadian Red River exploring expedition of 1858, has been good enough to forward to the Bureau of Ethnology two photographs representing this variety of grave, which he found 15 or 20 miles from the present town of Winnipeg, and they are represented in the woodcuts, Figures 8 and 9.

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*I saw the body of this woman in the tree. It was undoubtedly an exceptional case. When I came here (Rock Island) the bluffs on the peninsula between Mississippi and Rock River (three miles distant) were thickly studded with Indian grave mounds, showing conclusively that subterranean was the usual mode of burial. In making roads, streets, and digging foundations, skulls, bones, trinkets, beads, &c., in great numbers, were exhumed, proving that many things (according to the wealth or station of survivors) were deposited in the graves. In 1836 I witnessed the burial of two chiefs in the manner stated.—P. GREGG.

†Tract No. 50, West. Reserve and North. Ohio Hist. Soc. (1879?), p. 107.

‡Hist. of Ft. Wayne, 1868, p. 284.

CAIRN-BURIAL.

The next mode of interment to be considered is that of cairn or rock burial, which has prevailed and is still common to a considerable extent among the tribes living in the Rocky Mountains and the Sierra Nevadas.

In the summer of 1872 the writer visited one of these rock cemeteries in Middle Utah, which had been used for a period not exceeding fifteen or twenty years. It was situated at the bottom of a rock slide, upon the side of an almost inaccessible mountain, in a position so carefully chosen for concealment that it would have been almost impossible to find it without a guide. Several of the graves were opened, and found to have been constructed in the following manner: A number of bowlders had been removed from the bed of the slide until a sufficient cavity had been obtained; this was lined with skins, the corpse placed therein, with weapons, ornaments, &c., and covered over with saplings of the mountain aspen; on the top of these the removed bowlders were piled, forming a huge cairn, which appeared large enough to have marked the last resting place of an elephant. In the immediate vicinity of the graves were scattered the osseous remains of a number of horses which had been sacrificed, no doubt, during the funeral ceremonies. In one of the graves, said to contain the body of a chief, in addition to a number of articles useful and ornamental, were found parts of the skeleton of a boy, and tradition states that a captive boy was buried alive at this place.

From Dr. O. G. Given, physician to the Kiowa and Comanche Agency, Indian Territory, the following description of burial ceremonies was received. According to this gentleman the Kiowas call themselves *Kaw-a-wāh*, the Comanches *Nerm*, and the Apaches *Tāh-zee.*

They bury in the ground or in crevices of rocks. They do not seem to have any particular rule with regard to the position. Sometimes prone, sometimes supine, but always decumbent. They select a place where the grave is easily prepared, which they do with such implements as they chance to have, viz, a squaw-axe, or hoe. If they are traveling, the grave is often very hastily prepared and not much time is spent in finishing. I was present at the burial of Black Hawk, an Apache chief, some two years ago, and took the body in my light wagon up the side of a mountain to the place of burial. They found a crevice in the rocks about four feet wide and three feet deep. By filling in loose rocks at either end they made a very nice tomb. The body was then put in face downwards, short sticks were put across, resting on projections of rock at the sides, brush was thrown on this, and flat rocks laid over the whole of it.

The body of the deceased is dressed in the best clothing, together with all the ornaments most admired by the person when living. The face is painted with any colored paint they may have, mostly red and yellow, as I have observed. The body is then wrapped in skins, blankets, or domestic, with the hands laid across the breast, and the legs placed upon the thighs. They put into the grave their guns, bows and arrows, tobacco, and if they have it a blanket, moccasins, and trinkets of various kinds. One

or more horses are killed over or near the grave. Two horses and a mule were killed near Black Hawk's grave. They were led up near and shot in the head. At the death of a Comanche chief, some years ago, I am told about seventy horses were killed, and a greater number than that were said to have been killed at the death of a prominent Kiowa chief a few years since.

The mourning is principally done by the relatives and immediate friends, although any one of their own tribe, or one of another tribe, who chances to be passing, will stop and moan with the relatives. Their mourning consists in a wierd wail, which to be described must be heard, and once heard is never forgotten, together with the scarifying of their faces, arms, and legs with some sharp instrument, the cutting off of the hair, and oftentimes the cutting off of a joint of a finger, usually the little finger (Comanches do not cut off fingers). The length of time and intensity of their mourning depends upon the relation and position of the deceased in the tribe. I have known instances where, if they should be passing along where any of their friends had died, even a year after their death, they would mourn.

The Shoshones, of Nevada, generally concealed their dead beneath heaps of rocks, according to H. Butterfield, of Tyho, Nye County, Nevada, although occasionally they either burn or bury them. He gives as reasons for rock burial: 1st, to prevent coyotes eating the corpses; 2d, because they have no tools for deep excavations; and 3d, natural indolence of the Indians—indisposition to work any more than can be helped.

The Pi-Utes, of Oregon, bury in cairns; the Blackfeet do the same, as did also the Acaxers and Yaquis, of Mexico, and the Esquimaux; in fact, a number of examples might be quoted. In foreign lands the custom prevailed among certain African tribes, and it is said that the ancient Balearic Islanders covered their dead with a heap of stones, but this ceremony was preceded by an operation which consisted in cutting the body in small pieces and collecting in a pot.

CREMATION.

Next should be noted this mode of disposing of the dead, a common custom to a considerable extent among North American tribes, especially those living on the western slope of the Rocky Mountains, although we have undoubted evidence that it was also practiced among the more eastern ones. This rite may be considered as peculiarly interesting from its great antiquity, for Tegg* informs us that it reached as far back as the Theban war, in the account of which mention is made of the burning of Menœacus and Archemorus, who were contemporary with Jair, eighth judge of Israel. It was common in the interior of Asia and among the ancient Greeks and Romans, and has also prevailed among the Hindoos up to the present time. In fact, it is now rapidly becoming a custom among civilized people.

While there is a certain degree of similarity between the performance

*The Last Act, 1876.

of this rite among the people spoken of and the Indians of North America, yet, did space admit, a discussion might profitably be entered upon regarding the details of it among the ancients and the origin of the ceremony. As it is, simple narrations of cremation in this country, with discursive notes and an account of its origin among the Nishinams of California, by Stephen Powers,* seem to be all that is required at this time:

The moon and the coyote wrought together in creating all things that exist. The moon was good, but the coyote was bad. In making men and women the moon wished to so fashion their souls that when they died they should return to the earth after two or three days, as he himself does when he dies. But the coyote was evil disposed, and said this should not be; but that when men died their friends should burn their bodies, and once a year make a great mourning for them; and the coyote prevailed. So, presently when a deer died, they burned his body, as the coyote had decreed, and after a year they made a great mourning for him. But the moon created the rattlesnake and caused it to bite the coyote's son, so that he died. Now, though the coyote had been willing to burn the deer's relations, he refused to burn his own son. Then the moon said unto him, "This is your own rule. You would have it so, and now your son shall be burned like the others." So he was burned, and after a year the coyote mourned for him. Thus the law was established over the coyote also, and, as he had dominion over men, it prevailed over men likewise.

This story is utterly worthless for itself, but it has its value in that it shows there was a time when the California Indians did not practice cremation, which is also established by other traditions. It hints at the additional fact that the Nishinams to this day set great store by the moon; consider it their benefactor in a hundred ways, and observe its changes for a hundred purposes.

Another myth regarding cremation is given by Adam Johnston, in Schoolcraft,† and relates to the Bonaks, or root-diggers:

The first Indians that lived were coyotes. When one of their number died the body became full of little animals or spirits, as they thought them. After crawling over the body for a time they took all manner of shapes, some that of the deer, others the elk, antelope, &c. It was discovered, however, that great numbers were taking wings, and for a while they sailed about in the air, but eventually they would fly off to the moon. The old coyotes or Indians, fearing the earth might become depopulated in this way, concluded to stop it at once, and ordered that when one of their people died the body must be burnt. Ever after they continued to burn the bodies of deceased persons.

Ross Cox gives an account of the process as performed by the Tolkotins of Oregon:‡

The ceremonies attending the dead are very singular, and quite peculiar to this tribe. The body of the deceased is kept nine days laid out in his lodge, and on the tenth it is buried. For this purpose a rising ground is selected, on which are laid a number of sticks, about 7 feet long, of cypress, neatly split, and in the interstices is placed a quantity of gummy wood. During these operations invitations are dispatched to the natives of the neighboring villages requesting their attendance at the ceremony. When the preparations are perfected the corpse is placed on the pile, which is immediately ignited, and during the process of burning, the bystanders appear to be in a

* Cont. to N. A. Ethnol., 1877, vol. iii, p. 341.

† Hist. Indian Tribes of the United States, 1854, part IV, p. 224.

‡ Adventures on the Columbia River, 1831, vol. ii, p. 387.

T. Sinclair & Son Lith. Phila.

Fig 10 TOLKOTIN CREMATION

high state of merriment. If a stranger happen to be present they invariably plunder him; but if that pleasure be denied them, they never separate without quarreling among themselves. Whatever property the deceased possessed is placed about the corpse; and if he happened to be a person of consequence, his friends generally purchase a capote, a shirt, a pair of trousers, &c., which articles are also laid around the pile. If the doctor who attended him has escaped uninjured, he is obliged to be present at the ceremony, and for the last time tries his skill in restoring the defunct to animation. Failing in this, he throws on the body a piece of leather, or some other article, as a present, which in some measure appeases the resentment of his relatives, and preserves the unfortunate quack from being maltreated. During the nine days the corpse is laid out, the widow of the deceased is obliged to sleep along side it from sunset to sunrise; and from this custom there is no relaxation even during the hottest days of summer! While the doctor is performing his last operations she must lie on the pile, and after the fire is applied to it she cannot stir until the doctor orders her to be removed, which, however, is never done until her body is completely covered with blisters. After being placed on her legs, she is obliged to pass her hands gently through the flame and collect some of the liquid fat which issues from the corpse, with which she is permitted to wet her face and body! When the friends of the deceased observe the sinews of the legs and arms beginning to contract they compel the unfortunate widow to go again on the pile, and by dint of hard pressing to straighten those members.

If during her husband's lifetime she has been known to have committed any act of infidelity or omitted administering to him savory food or neglected his clothing, &c., she is now made to suffer severely for such lapses of duty by his relations, who frequently fling her in the funeral pile, from which she is dragged by her friends; and thus between alternate scorching and cooling she is dragged backwards and forwards until she falls into a state of insensibility.

After the process of burning the corpse has terminated, the widow collects the larger bones, which she rolls up in an envelope of birch bark, and which she is obliged for some years afterwards to carry on her back. She is now considered and treated as a slave; all the laborious duties of cooking, collecting fuel, &c., devolve on her. She must obey the orders of all the women, and even of the children belonging to the village, and the slightest mistake or disobedience subjects her to the infliction of a heavy punishment. The ashes of her husband are carefully collected and deposited in a grave, which it is her duty to keep free from weeds; and should any such appear, she is obliged to root them out with her *fingers*. During this operation her husband's relatives stand by and beat her in a cruel manner until the task is completed or she falls a victim to their brutality. The wretched widows, to avoid this complicated cruelty, frequently commit suicide. Should she, however, linger on for three or four years, the friends of her husband agree to relieve her from her painful mourning. This is a ceremony of much consequence, and the preparations for it occupy a considerable time, generally from six to eight months. The hunters proceed to the various districts in which deer and beaver abound, and after collecting large quantities of meat and fur return to the village. The skins are immediately bartered for guns, ammunition, clothing, trinkets, &c. Invitations are then sent to the inhabitants of the various friendly villages, and when they have all assembled the feast commences, and presents are distributed to each visitor. The object of their meeting is then explained, and the woman is brought forward, still carrying on her back the bones of her late husband, which are now removed and placed in a covered box, which is nailed or otherwise fastened to a post twelve feet high. Her conduct as a faithful widow is next highly eulogized, and the ceremony of her manumission is completed by one man powdering on her head the down of birds and another pouring on it the contents of a bladder of oil! She is then at liberty to marry again or lead a life of single blessedness; but few of them, I believe, wish to encounter the risk attending a second widowhood.

The men are condemned to a similar ordeal, but they do not bear it with equal fortitude, and numbers fly to distant quarters to avoid the brutal treatment which custom has established as a kind of religous rite.

Figure 10 is an ideal sketch of the cremation according to the description given.

Perhaps a short review of some of the peculiar and salient points of this narrative may be permitted.

It is stated that the corpse is kept nine days after death—certainly a long period of time, when it is remembered that Indians as a rule endeavor to dispose of their dead as soon as possible. This may be accounted for on the supposition that it is to give the friends and relatives an opportunity of assembling, verifying the death, and of making proper preparations for the ceremony. With regard to the verification of the dead person, William Sheldon* gives an account of a similar custom which was common among the Caraibs of Jamaica, and which seems to throw some light upon the unusual retention of deceased persons by the tribe in question, although it must be admitted that this is mere hypothesis:

They had some very extraordinary customs respecting deceased persons. When one of them died, it was necessary that all his relations should see him and examine the body in order to ascertain that he died a natural death. They acted so rigidly on this principle, that if one relative remained who had not seen the body all the others could not convince that one that the death was natural. In such a case the absent relative considered himself as bound in honor to consider all the other relatives as having been accessories to the death of the kinsman, and did not rest until he had killed one of them to revenge the death of the deceased. If a Caraib died in Martinico or Guadaloupe and his relations lived in St. Vincents, it was necessary to summon them to see the body, and several months sometimes elapsed before it could be finally interred. When a Caraib died he was immediately painted all over with *roucou*, and had his mustachios and the black streaks in his face made with a black paint, which was different from that used in their lifetime. A kind of grave was then dug in the *carbet* where he died, about 4 feet square and 6 or 7 feet deep. The body was let down in it, when sand was thrown in, which reached to the knees, and the body was placed in it in a sitting posture, resembling that in which they crouched round the fire or the table when alive, with the elbows on the knees and the palms of the hands against the cheeks. No part of the body touched the outside of the grave, which was covered with wood and mats until all the relations had examined it. When the customary examinations and inspections were ended the hole was filled, and the bodies afterwards remained undisturbed. The hair of the deceased was kept tied behind. In this way bodies have remained several months without any symptoms of decay or producing any disagreeable smell. The *roucou* not only preserved them from the sun, air, and insects during their lifetime, but probably had the same effect after death. The arms of the Caraibs were placed by them when they were covered over for inspection, and they were finally buried with them.

Again, we are told that during the burning the bystanders are very merry. This hilarity is similar to that shown by the Japanese at a funeral, who rejoice that the troubles and worries of the world are over for the fortunate dead. The plundering of strangers present, it may be remembered, also took place among the Indians of the Carolinas. As

* Trans. Am. Antiq. Soc., 1820, vol. i, p. 377.

already mentioned on a preceding page, the cruel manner in which the widow is treated seems to be a modification of the Hindoo suttee, but, if the account be true, it would appear that death might be preferable to such torments.

It is interesting to note that in Corsica, as late as 1743, if a husband died, women threw themselves upon the widow and beat her severely. Bruhier quaintly remarks that this custom obliged women to take good care of their husbands.

George Gibbs, in Schoolcraft,* states that among the Indians of Clear Lake, California, "the body is consumed upon a scaffold built over a hole, into which the ashes are thrown and covered."

According to Stephen Powers, † cremation was common among the Se-nél of California. He thus relates it:

The dead are mostly burned. Mr. Willard described to me a scene of incremation that he once witnessed, which was frightful for its exhibitions of fanatic frenzy and infatuation. The corpse was that of a wealthy chieftain, and as he lay upon the funeral pyre they placed in his mouth two gold twenties, and other smaller coins in his ears and hands, on his breast, &c., besides all his finery, his feather mantles, plumes, clothing, shell money, his fancy bows, painted arrows, &c. When the torch was applied they set up a mournful ululation, chanting and dancing about him, gradually working themselves into a wild and ecstatic raving, which seemed almost a demoniacal possession, leaping, howling, lacerating their flesh. Many seemed to lose all self-control. The younger English-speaking Indians generally lend themselves charily to such superstitious work, especially if American spectators are present, but even they were carried away by the old contagious frenzy of their race. One stripped off a broadcloth coat, quite new and fine, and ran frantically yelling and cast it upon the blazing pile. Another rushed up, and was about to throw on a pile of California blankets, when a white man, to test his sincerity, offered him $16 for them, jingling the bright coins before his eyes, but the savage (for such he had become again for the moment), otherwise so avaricious, hurled him away with a yell of execration and ran and threw his offering into the flames. Squaws, even more frenzied, wildly flung upon the pyre all they had in the world—their dearest ornaments, their gaudiest dresses, their strings of glittering shells. Screaming, wailing, tearing their hair, beating their breasts in their mad and insensate infatuation, some of them would have cast themselves bodily into the flaming ruins and perished with the chief had they not been restrained by their companions. Then the bright, swift flames, with their hot tongues, licked this "cold obstruction" into chemic change, and the once "delighted spirit" of the savage was borne up. * * *

It seems as if the savage shared in Shakspeare's shudder at the thought of rotting in the dismal grave, for it is the one passion of his superstition to think of the soul, of his departed freind set free and purified by the swift purging heat of the flames not dragged down to be clogged and bound in the mouldering body, but borne up in the soft, warm chariots of the smoke toward the beautiful sun, to bask in his warmth and light, and then to fly away to the Happy Western Land. What wonder if the Indian shrinks with unspeakable horror from the thought of *burying his friend's soul!*—of pressing and ramming down with pitiless clods that inner something which once took such delight in the sweet light of the sun! What wonder if it takes years to persuade him to do otherwise and follow our custom! What wonder if even then he does it with sad fears and misgivings! Why not let him keep his custom! In the gorgeous

* Hist. Indian Tribes of the United States, 1853, part iii, p. 112.
† Contrib. to N. A. Ethnol., 1877, vol. iii, p. 169.

landscapes and balmy climate of California and India incremation is as natural to the savage as it is for him to love the beauty of the sun. Let the vile Esquimaux and the frozen Siberian bury their dead if they will; it matters little, the earth is the same above as below; or to them the bosom of the earth may seem even the better; but in California do not blame the savage if he recoils at the thought of going under ground! This soft pale halo of the lilac hills—ah, let him console himself if he will with the belief that his lost friend enjoys it still! The narrator concluded by saying that they destroyed full $500 worth of property. "The blankets," said he with a fine Californian scorn of such absurd insensibility to a good bargain, "the blankets that the American offered him $16 for were not worth half the money."

After death the Se-nél hold that bad Indians return into coyotes. Others fall off a bridge which all souls must traverse, or are hooked off by a raging bull at the further end, while the good escape across. Like the Yokaia and the Konkan, they believe it necessary to nourish the spirits of the departed for the space of a year. This is generally done by a squaw, who takes pinole in her blanket, repairs to the scene of the incremation, or to places hallowed by the memory of the dead, where she scatters it over the ground, meantime rocking her body violently to and fro in a dance and chanting the following chorous:

Hel-lel-li-ly,
Hel-lel-lo,
Hel-lel-lu.

This refrain is repeated over and over indefinitely, but the words have no meaning whatever.

Henry Gillman* has published an interesting account of the exploration of a mound near Waldo, Fla., in which he found abundant evidence that cremation had existed among the former Indian population. It is as follows:

In opening a burial-mound at Cade's Pond, a small body of water situated about two miles northeastward of Santa Fé Lake, Fla., the writer found two instances of cremation, in each of which the skull of the subject, which was unconsumed, was used as the depository of his ashes. The mound contained besides a large number of human burials, the bones being much decayed. With them were deposited a great number of vessels of pottery, many of which are painted in brilliant colors, chiefly red, yellow, and brown, and some of them ornamented with indented patterns, displaying not a little skill in the ceramic art, though they are reduced to fragments. The first of the skulls referred to was exhumed at a depth of 2½ feet. It rested on its apex (base uppermost), and was filled with fragments of half incinerated human bones, mingled with dark-colored dust, and the sand which invariably sifts into crania under such circumstances. Immediately beneath the skull lay the greater part of a human tibia, presenting the peculiar compression known as a platycnemism to the degree of affording a latitudinal index of .512; while beneath and surrounding it lay the fragments of a large number of human bones, probably constituting an entire individual. In the second instance of this peculiar mode in cremation, the cranium was discovered on nearly the opposite side of the mound, at a depth of 2 feet, and, like the former, resting on its apex. It was filled with a black mass—the residuum of burnt human bones mingled with sand. At three feet to the eastward lay the shaft of a flattened tibia, which presents the longitudinal index of .527. Both the skulls were free from all action of fire, and though subsequently crumbling to pieces on their removal, the writer had opportunity to observe their strong resemblance to the small, orthocephalic crania which he had exhumed from mounds in Michigan. The same resemblance was perceptible in the other cranium belonging to this mound. The small, narrow, retreating frontal, prominent parietal protuberances, rather protuberant occipital, which was

*Amer. Naturalist, November, 1878. p. 753.

not in the least compressed, the well-defined supraciliary ridges, and the superior border of the orbits, presenting a quadrilateral outline, were also particularly noticed. The lower facial bones, including the maxillaries, were wanting. On consulting such works as are accessible to him, the writer finds no mention of any similar relics having been discovered in mounds in Florida or elsewhere. For further particulars reference may be had to a paper on the subject read before the Saint Louis meeting of the American Association, August, 1878.

The discoveries made by Mr. Gillman would seem to indicate that the people whose bones he excavated resorted to a process of partial cremation, some examples of which will be given on another page. The use of crania as receptacles is certainly remarkable, if not unique.

The fact is well-known to archæologists that whenever cremation was practiced by Indians it was customary as a rule to throw into the blazing pyre all sorts of articles supposed to be useful to the dead, but no instance is known of such a wholesale destruction of property as occurred when the Indians of Southern Utah burned their dead, for Dr. E. Foreman relates, in the American Naturalist for July, 1876, the account of the exploration of a mound in that Territory, which proves that at the death of a person not only were the remains destroyed by fire, but all articles of personal property, even the very habitation which had served as a home. After the process was completed, what remained unburned was covered with earth and a mound formed.

A. S. Tiffany * describes what he calls a cremation-furnace, discovered within seven miles of Davenport, Iowa.

* * * Mound seven miles below the city, a projecting point known as Eagle Point. The surface was of the usual black soil to the depth of from 6 to 8 inches. Next was found a burnt indurated clay, resembling in color and texture a medium-burned brick, and about 30 inches in depth. Immediately beneath this clay was a bed of charred human remains 6 to 18 inches thick. This rested upon the unchanged and undisturbed loess of the bluffs, which formed the floor of the pit. Imbedded in this floor of unburned clay were a few very much decomposed, but unburned, human bones. No implements of any kind were discovered. The furnace appears to have been constructed by excavating the pit and placing at the bottom of it the bodies or skeletons which had possibly been collected from scaffolds, and placing the fuel among and above the bodies, with a covering of poles or split timbers extending over and resting upon the earth, with the clay covering above, which latter we now find resting upon the charred remains. The ends of the timber covering, where they were protected by the earth above and below, were reduced to charcoal, parallel pieces of which were found at right angles to the length of the mound. No charcoal was found among or near the remains, the combustion there having been complete. The porous and softer portions of the bones were reduced to pulverized bone-black. Mr. Stevens also examined the furnace. The mound had probably not been opened after the burning.

This account is doubtless true, but the inferences may be incorrect. Many more accounts of cremation among different tribes might be given to show how prevalent was the custom, but the above are thought to be sufficiently distinctive to serve as examples.

* Proc. Dav. Acad. Nat. Sci., 1867–76, p. 64.

PARTIAL CREMATION.

Allied somewhat to cremation is a peculiar mode of burial which is supposed to have taken place among the Cherokees, or some other tribe of North Carolina, and which is thus described by J. W. Foster:*

Up to 1819 the Cherokees held possession of this region, when, in pursuance of a treaty, they vacated a portion of the lands lying in the valley of the Little Tennessee River. In 1821 Mr. McDowell commenced farming. During the first season's operations the plowshare, in passing over a certain portion of a field, produced a hollow rumbling sound, and in exploring for the cause the first object met with was a shallow layer of charcoal, beneath which was a slab of burnt clay about 7 feet in length and 4 feet broad, which, in the attempt to remove, broke into several fragments. Nothing beneath this slab was found, but on examining its under side, to his great surprise there was the mould of a naked human figure. Three of these burned-clay sepulchers were thus raised and examined during the first year of his occupancy, since which time none have been found until recently. * * * During the past season (1872) the plow brought up another fragment of one of these moulds, revealing the impress of a plump human arm.

Col. C. W. Jenkes, the superintendent of the Corundum mines, which have recently been opened in that vicinity, advises me thus:

"We have Indians all about us, with traditions extending back for 500 years. In this time they have buried their dead under huge piles of stones. We have at one point the remains of 600 warriors under one pile, but a grave has just been opened of the following construction: A pit was dug, into which the corpse was placed, face upward; then over it was moulded a covering of mortar, fitting the form and features. On this was built a hot fire, which formed an entire shield of pottery for the corpse. The breaking up of one such tomb gives a perfect cast of the form of the occupant."

Colonel Jenkes, fully impressed with the value of these archæological discoveries, detailed a man to superintend the exhumation, who proceeded to remove the earth from the mould, which he reached through a layer of charcoal, and then with a trowel excavated beneath it. The clay was not thoroughly baked, and no impression of the corpse was left, except of the forehead and that portion of the limbs between the ankles and the knees, and even these portions of the mould crumbled. The body had been placed east and west, the head toward the east. "I had hoped," continues Mr. McDowell, "that the cast in the clay would be as perfect as one I found 51 years ago, a fragment of which I presented to Colonel Jenkes, with the impression of a part of the arm on one side and on the other of the fingers, that had pressed down the soft clay upon the body interred beneath." The mound-builders of the Ohio valley, as has been shown, often placed a layer of clay over the dead, but not in immediate contact, upon which they builded fires; and the evidences that cremation was often resorted to in their disposition are too abundant to be gainsaid.

This statement is corroborated by Mr. Wilcox: †

Mr. Wilcox also stated that when recently in North Carolina his attention was called to an unusal method of burial by an ancient race of Indians in that vicinity. In numerous instances burial places were discovered where the bodies had been placed with the face up and covered with a coating of plastic clay about an inch thick. A pile of wood was then placed on top and fired, which consumed the body and baked the clay, which retained the impression of the body. This was then lightly covered with earth.

* Pre-historic Races, 1873, p. 149.

† Proc. Acad. Nat. Sci. Phila., Nov. 1874, p. 168.

It is thought no doubt can attach to the statements given, but the cases are remarkable as being the only instances of the kind met with in the extensive range of reading preparatory to a study of the subject of burial, although it must be observed that Bruhier states that the ancient Ethiopians covered the corpses of their dead with plaster (probably mud), but they did not burn these curious coffins.

Another method, embracing both burial and cremation, has been practiced by the Pitt River or Achomawi Indians of California, who

Bury the body in the ground in a standing position, the shoulders nearly even with the ground. The grave is prepared by digging a hole of sufficient depth and circumference to admit the body, the head being cut off. In the grave are placed the bows and arrows, bead-work, trappings, &c., belonging to the deceased; quantities of food, consisting of dried fish, roots, herbs, &c., were placed with the body also. The grave was then filled up, covering the headless body; then a bundle of fagots was brought and placed on the grave by the different members of the tribe, and on these fagots the head was placed, the pile fired, and the head consumed to ashes; after this was done the female relatives of the deceased, who had appeared as mourners with their faces blackened with a preparation resembling tar or paint, dipped their fingers in the ashes of the cremated head and made three marks on their right cheek. This constituted the mourning garb, the period of which lasted until this black substance wore off from the face. In addition to this mourning, the blood female relatives of the deceased (who, by the way, appeared to be a man of distinction) had their hair cropped short. I noticed while the head was burning that the old women of the tribe sat on the ground, forming a large circle, inside of which another circle of young girls were formed standing and swaying their bodies to and fro and singing a mournful ditty. This was the only burial of a male that I witnessed. The custom of burying females is very different, their bodies being wrapped or bundled up in skins and laid away in caves, with their valuables, and in some cases food being placed with them in their mouths. Occasionally money is left to pay for food in the spirit land.

This account is furnished by Gen. Charles H. Tompkins, deputy quartermaster-general, United States Army, who witnessed the burial above related, and is the more interesting as it seems to be the only well-authenticated case on record, although E. A. Barber* has described what may possibly have been a case of cremation like the one above noted:

A very singular case of aboriginal burial was brought to my notice recently by Mr. William Klingbeil, of Philadelphia. On the New Jersey bank of the Delaware River, a short distance below Gloucester City, the skeleton of a man was found buried in a standing position, in a high, red, sandy-clay bluff overlooking the stream. A few inches below the surface the neck bones were found, and below these the remainder of the skeleton, with the exception of the bones of the hands and feet. The skull being wanting, it could not be determined whether the remains were those of an Indian or of a white man, but in either case the sepulture was peculiarly aboriginal. A careful exhumation and critical examination by Mr. Klingbeil disclosed the fact that around the lower extremities of the body had been placed a number of large stones, which revealed traces of fire, in conjunction with charred wood, and the bones of the feet had undoubtedly been consumed. This fact makes it appear reasonably certain that the subject had been executed, probably as a prisoner of war. A pit had been dug, in which he was placed erect, and a fire kindled around him. Then he had been buried alive, or, at least, if he did not survive the fiery ordeal, his body was imbedded

*Amer. Naturalist, Sept., 1878, p. 629.

in the earth, with the exception of his head, which was left protruding above the surface. As no trace of the cranium could be found, it seems probable that the head had either been burned or severed from the body and removed, or else left a prey to ravenous birds. The skeleton, which would have measured fully six feet in height, was undoubtedly that of a man.

Blacking the face, as is mentioned in the first account, is a custom known to have existed among many tribes throughout the world, but in some cases different earths and pigments are used as signs of mourning. The natives of Guinea smear a chalky substance over their bodies as an outward expression of grief, and it is well known that the ancient Israelites threw ashes on their heads and garments. Placing food with the corpse or in its mouth, and money in the hand, finds its analogue in the custom of the ancient Romans, who, some time before interment, placed a piece of money in the corpse's mouth, which was thought to be Charon's fare for wafting the departed soul over the Infernal River. Besides this, the corpse's mouth was furnished with a certain cake, composed of flour, honey, &c. This was designed to appease the fury of Cerberus, the infernal doorkeeper, and to procure a safe and quiet entrance. These examples are curious coincidences, if nothing more.

AERIAL SEPULTURE.

LODGE-BURIAL.

Our attention should next be turned to sepulture above the ground, including lodge, house, box, scaffold, tree, and canoe burial, and the first example which may be given is that of burial in lodges, which is by no means common. The description which follows is by Stansbury,* and relates to the Sioux:

I put on my moccasins, and, displaying my wet shirt like a flag to the wind, we proceeded to the lodges which had attracted our curiosity. There were five of them pitched upon the open prairie, and in them we found the bodies of nine Sioux laid out upon the ground, wrapped in their robes of buffalo-skin, with their saddles, spears, camp-kettles, and all their accoutrements piled up around them. Some lodges contained three, others only one body, all of which were more or less in a state of decomposition. A short distance apart from these was one lodge which, though small, seemed of rather superior pretensions, and was evidently pitched with great care. It contained the body of a young Indian girl of sixteen or eighteen years, with a countenance presenting quite an agreeable expression; she was richly dressed in leggins of fine scarlet cloth elaborately ornamented; a new pair of moccasins, beautifully embroidered with porcupine quills, was on her feet, and her body was wrapped in two superb buffalo-robes worked in like manner; she had evidently been dead but a day or two, and to our surprise a portion of the upper part of her person was bare, exposing the face and a part of the breast, as if the robes in which she was wrapped had by some means been disarranged, whereas all the other bodies were closely covered up.

* Explorations of the Valley of the Great Salt Lake of Utah, 1852, p. 43.

It was, at the time, the opinion of our mountaineers, that these Indians must have fallen in an encounter with a party of Crows; but I subsequently learned that they had all died of the cholera, and that this young girl, being considered past recovery, had been arranged by her friends in the habiliments of the dead, inclosed in the lodge alive, and abandoned to her fate, so fearfully alarmed were the Indians by this to them novel and terrible disease.

It might, perhaps, be said that this form of burial was exceptional, and due to the dread of again using the lodges which had served as the homes of those afflicted with the cholera, but it is thought such was not the case, as the writer has notes of the same kind of burial among the same tribe and of others, notably the Crows, the body of one of their chiefs (Long Horse) being disposed of as follows:

The lodge poles inclose an oblong circle some 18 by 22 feet at the base, converging to a point at least 30 feet high, covered with buffalo-hides dressed without hair except a part of the tail switch, which floats outside like, and mingled with human scalps. The different skins are neatly fitted and sewed together with sinew, and all painted in seven alternate horizontal stripes of brown and yellow, decorated with various life-like war scenes. Over the small entrance is a large bright cross, the upright being a large stuffed white wolf-skin upon his war lance, and the cross-bar of bright scarlet flannel, containing the quiver of bow and arrows, which nearly all warriors still carry, even when armed with repeating rifles. As the cross is not a pagan but a Christian (which Long Horse was not either by profession or practice) emblem, it was probably placed there by the influence of some of his white friends. I entered, finding Long Horse buried Indian fashion, in full war dress, paint and feathers, in a rude coffin, upon a platform about breast high, decorated with weapons, scalps, and ornaments. A large opening and wind-flap at the top favored ventilation, and though he had lain there in an open coffin a full month, some of which was hot weather, there was but little effluvia; in fact, I have seldom found much in a burial-téepee, and when this mode of burial is thus performed it is less repulsive than natural to suppose.

This account is furnished by Col. P. W. Norris, superintendent of Yellowstone National Park, he having been an eye-witness of what he relates in 1876; and although the account has been questioned, it is admitted for the reason that this gentleman persists, after a reperusal of his article, that the facts are correct.

General Stewart Van Vliet, U. S. A., informs the writer that among the Sioux of Wyoming and Nebraska when a person of consequence dies a small scaffold is erected inside his lodge and the body wrapped in skins deposited therein. Different utensils and weapons are placed by his side, and in front a horse is slaughtered; the lodge is then closed up.

Dr. W. J. Hoffman writes as follows regarding the burial lodges of the Shoshones of Nevada:

The Shoshones of the upper portion of Nevada are not known to have at any time practiced cremation. In Independence Valley, under a deserted and demolished *wickeup* or "brush tent," I found the dried-up corpse of a boy, about twelve years of age. The body had been here for at least six weeks, according to information received, and presented a shriveled and hideous appearance. The dryness of the atmosphere prevented decomposition. The Indians in this region usually leave the body when life terminates, merely throwing over it such rubbish as may be at hand, or the remains of their primitive shelter tents, which are mostly composed of small branches, leaves, grass, &c.

The Shoshones living on Independence Creek and on the eastern banks of the Owyhee River, upper portion of Nevada, did not bury their dead at the time of my visit in 1871. Whenever the person died, his lodge (usually constructed of poles and branches of *Sakx*) was demolished and placed in one confused mass over his remains, when the band removed a short distance. When the illness is not too great, or death sudden, the sick person is removed to a favorable place, some distance from their temporary camping ground, so as to avoid the necessity of their own removal. Coyotes, ravens, and other carnivora soon remove all the flesh, so that there remains nothing but the bones, and even these are scattered by the wolves. The Indians at Tuscarora, Nevada, stated that when it was possible, and that they should by chance meet the bony remains of any Shoshone, they would bury it, but in what manner I failed to discover, as they were very reticent, and avoided giving any information regarding the dead. One corpse was found totally dried and shrivelled, owing to the dryness of the atmosphere in this region.

Capt. F. W. Beechey* describes a curious mode of burial among the Esquimaux on the west coast of Alaska, which appears to be somewhat similar to lodge-burial. Figure 11, after his illustration, affords a good idea of these burial receptacles.

Near us there was a burying-ground, which, in addition to what we had already observed at Cape Espenburg, furnished several examples of the manner in which this tribe of natives dispose of their dead. In some instances a platform was constructed of drift-wood, raised about two feet and a quarter from the ground, upon which the body was placed, with its head to the westward, and a double tent of drift-wood erected over it; the inner one with spars about seven feet long, and the outer one with some that were three times that length. They were placed close together, and at first no doubt sufficiently so to prevent the depredations of foxes and wolves; but they had yielded at last; and all the bodies, and even the hides that covered them, had suffered by these rapacious animals.

In these tents of the dead there were no coffins or planks, as at Cape Espenburg; the bodies were dressed in a frock made of eider-duck skins, with one of deer-skin over it, and were covered with a sea-horse hide, such as the natives use for their *baidars*. Suspended to the poles, and on the ground near them, were several Esquimaux implements, consisting of wooden trays, paddles, and a tamborine, which, we were informed as well as signs could convey the meaning of the natives, were placed there for the use of the deceased, who, in the next world (pointing to the western sky) ate, drank, and sang songs. Having no interpreter, this was all the information I could obtain; but the custom of placing such instruments around the receptacles of the dead is not unusual, and in all probability the Esquimaux may believe that the soul has enjoyments in the next world similar to those which constitute their happiness in this.

The Blackfeet, Cheyennes, and Navajos also bury in lodges, and the Indians of Bellingham Bay, according to Dr. J. F. Hammond, U. S. A., place their dead in carved wooden sarcophagi, inclosing these with a rectangular tent of some white material. Some of the tribes of the northwest coast bury in houses similar to those shown in Figure 12.

Bancroft† states that certain of the Indians of Costa Rica, when a death occurred, deposited the body in a small hut constructed of plaited palm reeds. In this it is preserved for three years, food being supplied,

* Narrative of a Voyage to the Pacific, 1831, vol. i, p. 332.
† Nat. Races of Pac. States, 1874, vol. i, p. 780.

Fig 12 BURIAL HOUSES

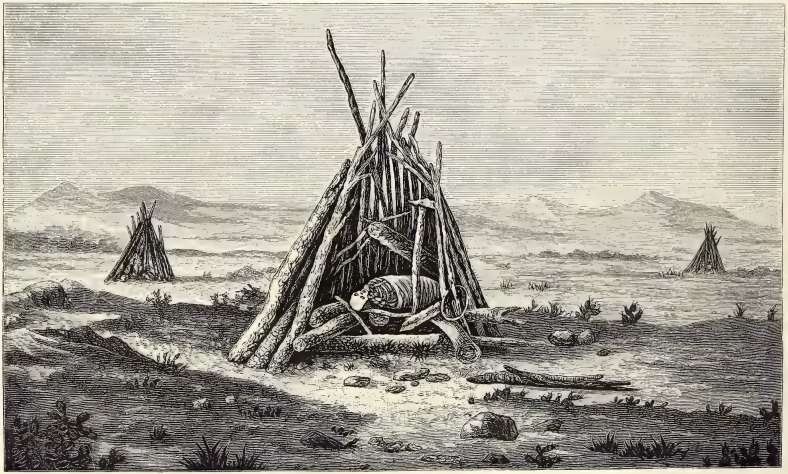


FIG. 11.—Eskimo Lodge Burial.

and on each anniversary of the death it is redressed and attended to amid certain ceremonies. The writer has been recently informed that a similar custom prevailed in Demerara. No authentic accounts are known of analogous modes of burial among the peoples of the Old World, although quite frequently the dead were interred beneath the floors of their houses, a custom which has been followed by the Mosquito Indians of Central America and one or two of our own tribes.

BOX-BURIAL.

Under this head may be placed those examples furnished by certain tribes on the northwest coast who used as receptacles for the dead wonderfully carved, large wooden chests, these being supported upon a low platform or resting on the ground. In shape they resemble a small house with an angular roof, and each one has an opening through which food may be passed to the corpse.

Some of the tribes formerly living in New York used boxes much resembling those spoken of, and the Creeks, Choctaws, and Cherokees did the same.

Capt. J. H. Gageby, United States Army, furnishes the following relating to the Creeks in Indian Territory:

* * * are buried on the surface, in a box or a substitute made of branches of trees, covered with small branches, leaves, and earth. I have seen several of their graves, which after a few weeks had become uncovered and the remains exposed to view. I saw in one Creek grave (a child's) a small sum of silver; in another (adult male) some implements of warfare, bow and arrows. They are all interred with the feet of the corpse to the east. In the mourning ceremonies of the Creeks the nearer relatives smeared their hair and faces with a composition made of grease and wood-ashes, and would remain in that condition for several days, and probably a month.

Josiah Priest* gives an account of the burial repositories of a tribe of Pacific coast Indians living on the Talomeco River, Oregon. The writer believes it to be entirely unreliable and gives it place as an example of credulity shown by many writers and readers:

The corpses of the Caciques were so well embalmed that there was no bad smell; they were deposited in large wooden coffins, well constructed, and placed upon benches two feet from the ground. In smaller coffins, and in baskets, the Spaniards found the clothes of the deceased men and women, and so many pearls that they distributed them among the officers and soldiers by handsfulls.

In Bancroft† may be found the following account of the burial boxes of the Esquimaux:

The Eskimos do not as a rule bury their dead, but double the body up and place it on the side in a plank box, which is elevated three or four feet from the ground and supported by four posts. The grave-box is often covered with painted figures of

* Am. Antiq. and Discov., 1838, p. 286.

† Nat. Races of Pac. States, 1874, vol. i, p. 69.

birds, fishes, and animals. Sometimes it is wrapped in skins placed upon an elevated frame, and covered with planks or trunks of trees so as to protect it from wild beasts. Upon the frame, or in the grave-box, are deposited the arms, clothing, and sometimes the domestic utensils of the deceased. Frequent mention is made by travelers of burial places where the bodies lie exposed with their heads placed towards the north.

Frederic Whymper* describes the burial boxes of the Kalosh of that Territory:

Their grave-boxes or tombs are interesting. They contain only the ashes of the dead. These people invariably burn the deceased. On one of the boxes I saw a number of faces painted, long tresses of human hair depending therefrom. Each head represented a victim of the (happily) deceased one's ferocity. In his day he was doubtless more esteemed than if he had never harmed a fly. All their graves are much ornamented with carved and painted faces and other devices.

W. H. Dall,† well known as one of the most experienced and careful of American ethnologic observers, describes the burial boxes of the Innuits of Unalaklik, Innuits of Yuka, and Ingaliks of Ulukuk as follows. Figs. 13 and 14 are after his illustrations in the volume noted.

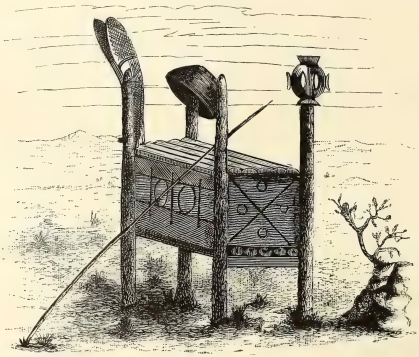


FIG. 13.—Innuit grave.

INNUIT OF UNALAKLIK.

The usual fashion is to place the body, doubled up on its side, in a box of plank hewed out of spruce logs, and about four feet long; this is elevated several feet above the ground on four posts, which project above the coffin or box. The sides are often painted, with red chalk, in figures of fur animals, birds, and fishes. According to the

* Travels in Alaska, 1869, p. 100.

† Alaska and its Resources, 1870, pp. 19, 132, 145.

wealth of the dead man, a number of articles which belonged to him are attached to the coffin of strewed around it; some of them have kyaks, bows and arrows, hunting implements, snow-shoes, or even kettles, around the grave or fastened to it; and almost invariably the wooden dish, or "kantág," from which the deceased was accustomed to eat, is hung on one of the posts.

INNUIT OF YUKON.

The dead are enclosed above ground in a box in the manner previously described. The annexed sketch shows the form of the sarcophagus, which, in this case, is ornamented with snow-shoes, a reel for seal-lines, a fishing-rod, and a wooden dish or kantág. The latter is found with every grave, and usually one is placed in the box with the body. Sometimes a part of the property of the dead person is placed in the coffin or about it; occasionally the whole is thus disposed of. Generally the furs, provisions, and clothing (except such as has been worn) are divided among the nearer relatives of the dead, or remain in possession of his family if he has one; such clothing, household utensils, and weapons as the deceased had in daily use are almost invariably enclosed in his coffin. If there are many deaths about the same time, or an epidemic occurs, everything belonging to the dead is destroyed. The house in which a death occurs is always deserted and usually destroyed. In order to avoid this, it is not uncommon to take the sick person out of the house and put him in a tent to die.

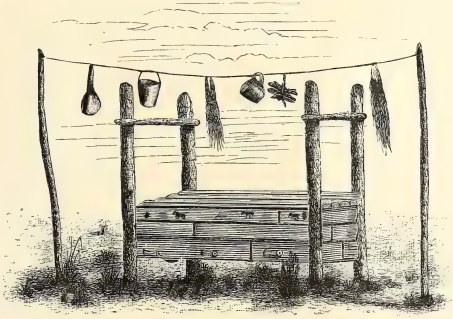


FIG. 14.—Ingalik grave.

A woman's coffin may be known by the kettles and other feminine utensils about it. There is no distinction between the sexes in method of burial. On the outside of the coffin figures are usually drawn in red ochre. Figures of fur animals usually indicate that the dead person was a good trapper; if seal or deer skin, his proficiency as a hunter; representation of parkies that he was wealthy; the manner of his death is also occasionally indicated. For four days after a death the women in the village do no sewing; for five days the men do not cut wood with an axe. The relatives of the dead must not seek birds' eggs on the overhanging cliffs for a year, or their feet will slip from under them and they will be dashed to pieces. No mourning is worn or indicated, except by cutting the hair. Women sit and watch the body, chanting a

mournful refrain, until it is interred. They seldom suspect that others have brought the death about by shamánism, as the Indians almost invariably do.

At the end of a year from the death, a festival is given, presents are made to those who assisted in making the coffin, and the period of mourning is over. Their grief seldom seems deep, but they indulge for a long time in wailing for the dead at intervals. I have seen several women who refused to take a second husband, and had remained single, in spite of repeated offers, for many years.

INGALIKS OF ULUKUK.

As we drew near, we heard a low, wailing chant, and Mikála, one of my men, informed me that it was women lamenting for the dead. On landing, I saw several Indians hewing out the box in which the dead are placed. * * * The body lay on its side in a deer-skin; the heels were lashed to the small of the back, and the head bent forward on the chest, so that his coffin needed to be only about four feet long.

TREE AND SCAFFOLD BURIAL.

We may now pass to what may be called aerial sepulture proper, the most common examples of which are tree and scaffold burial, quite extensively practiced even at the present time. From what can be learned, the choice of this mode depends greatly on the facilities present; where timber abounds, trees being used; if absent, scaffolds being employed.

From William J. Cleveland, of the Spotted Tail Agency, Nebraska, has been received a most interesting account of the mortuary customs of the Brulé or Teton Sioux, who belong to the Lakotah alliance. They are called *Sicaugu*, in the Indian tongue *Seechaugas*, or the "burned thigh" people. The narrative is given in its entirety, not only on account of its careful attention to details, but from its known truthfulness of description. It relates to tree and scaffold burial.

FUNERAL CEREMONIES AND MOURNING OBSERVANCES.

Though some few of this tribe now lay their dead in rude boxes, either burying them when implements for digging can be had, or, when they have no means of making a grave, placing them on top of the ground on some hill or other slight elevation, yet this is done in imitation of the whites, and their general custom, as a people, probably does not differ in any essential way from that of their forefathers for many generations in the past. In disposing of the dead, they wrap the body tightly in blankets or robes (sometimes both), wind it all over with thongs made of the hide of some animal, and place it, reclining on the back at full length, either in the branches of some tree or on a scaffold made for the purpose. These scaffolds are about eight feet high, and made by planting four forked sticks firmly in the ground, one at each corner, and then placing others across on top, so as to form a floor, on which the body is securely fastened. Sometimes more than one body is placed on the same scaffold, though generally a separate one is made for each occasion. These Indians being in all things most superstitious, attach a kind of sacredness to these scaffolds and all the materials used on or about the dead. This superstition is in itself sufficient to prevent any of their own people from disturbing the dead, and for one of another nation to in any wise meddle with them is considered an offense not too severely punished by death.

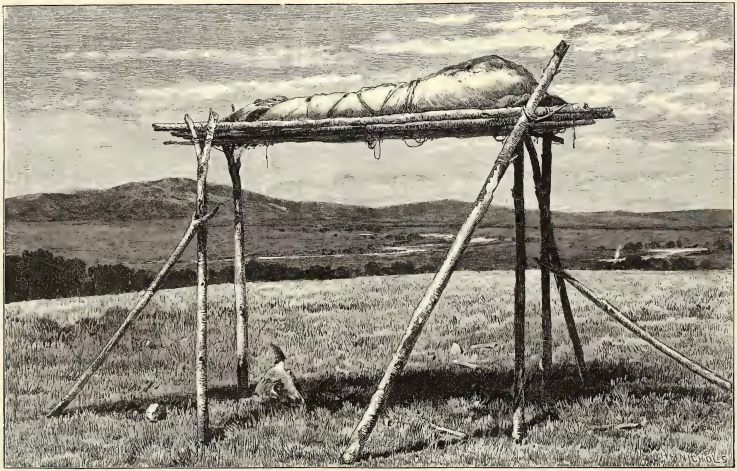


Fig. 15.—Dakota Scaffold Burial.

Fig 16 OFFERING FOOD TO THE DEAD

The same feeling also prevents them from ever using old scaffolds or any of the wood which has been used about them, even for firewood, though the necessity may be very great, for fear some evil consequences will follow. It is also the custom, though not universally followed, when bodies have been for two years on the scaffolds to take them down and bury them under ground.

All the work about winding up the dead, building the scaffold, and placing the dead upon it is done by women only, who, after having finished their labor, return and bring the men, to show them where the body is placed, that they may be able to find it in future. Valuables of all kinds, such as weapons, ornaments, pipes, &c.—in short, whatever the deceased valued most highly while living, and locks of hair cut from the heads of the mourners at his death, are always bound up with the body. In case the dead was a man of importance, or if the family could afford it, even though he were not, one or several horses (generally, in the former case, those which the departed thought most of) are shot and placed under the scaffold. The idea in this is that the spirit of the horse will accompany and be of use to his spirit in the "happy hunting grounds," or, as these people express it, "the spirit land."

When an Indian dies, and in some cases even before death occurs, the friends and relatives assemble at the lodge and begin crying over the departed or departing one. This consists in uttering the most heartrending, almost hideous wails and lamentations, in which all join until exhausted. Then the mourning ceases for a time until some one starts it again, when all join in as before and keep it up until unable to cry longer. This is kept up until the body is removed. This crying is done almost wholly by women, who gather in large numbers on such occasions, and among them a few who are professional mourners. These are generally old women and go whenever a person is expected to die, to take the leading part in the lamentations, knowing that they will be well paid at the distribution of goods which follows. As soon as death takes place, the body is dressed by the women in the best garments and blankets obtainable, new ones if they can be afforded. The crowd gathered near continue wailing piteously, and from time to time cut locks of hair from their own heads with knives, and throw them on the dead body. Those who wish to show their grief most strongly, cut themselves in various places, generally in the legs and arms, with their knives or pieces of flint, more commonly the latter, causing the blood to flow freely over their persons. This custom is followed to a less degree by the men.

A body is seldom kept longer than one day as, besides the desire to get the dead out of sight, the fear that the disease which caused the death will communicate itself to others of the family causes them to hasten the disposition of it as soon as they are certain that death has actually taken place.

Until the body is laid away the mourners eat nothing. After that is done, connected with which there seems to be no particular ceremony, the few women who attend to it return to the lodge and a distribution is made among them and others, not only of the remaining property of the deceased, but of all the possessions, even to the lodge itself of the family to which he belonged. This custom in some cases has been carried so far as to leave the rest of the family not only absolutely destitute but actually naked. After continuing in this condition for a time, they gradually reach the common level again by receiving gifts from various sources.

The received custom requires of women, near relatives of the dead, a strict observance of the ten days following the death, as follows: They are to rise at a very early hour and work unusually hard all day, joining in no feast, dance, game, or other diversion, eat but little, and retire late, that they may be deprived of the usual amount of sleep as of food. During this they never paint themselves, but at various times go to the top of some hill and bewail the dead in loud cries and lamentations for hours together. After the ten days have expired they paint themselves again and engage in the usual amusements of the people as before. The men are expected to mourn and fast for one day and then go on the war-path against some other tribe, or on some long journey alone. If he prefers, he can mourn and fast for two or more

days and remain at home. The custom of placing food at the scaffold also prevails to some extent. If but little is placed there it is understood to be for the spirit of the dead, and no one is allowed to touch it. If much is provided, it is done with the intention that those of the same sex and age as the deceased shall meet there and consume it. If the dead be a little girl, the young girls meet and eat what is provided; if it be a man, then men assemble for the same purpose. The relatives never mention the name of the dead.

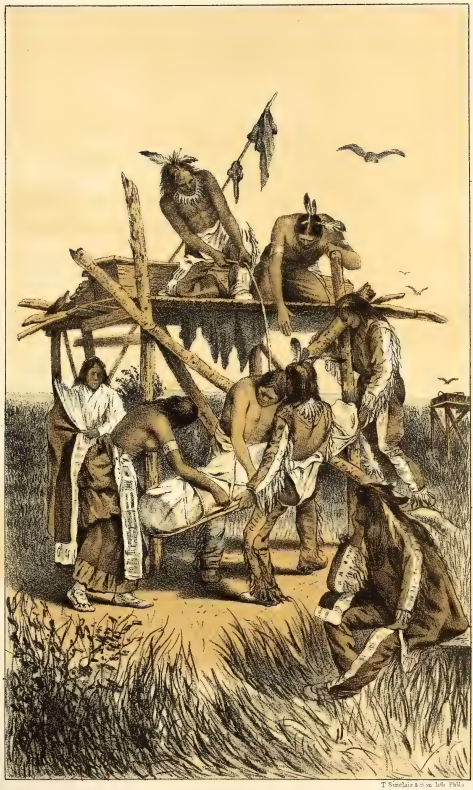
"KEEPING THE GHOST."

Still another custom, though at the present day by no means generally followed, is still observed to some extent among them. This is called *wanagee yuhapee*, or "keeping the ghost." A little of the hair from the head of the deceased being preserved is bound up in calico and articles of value until the roll is about two feet long and ten inches or more in diameter, when it is placed in a case made of hide handsomely ornamented with various designs in different colored paints. When the family is poor, however, they may substitute for this case blue or scarlet blanket or cloth. The roll is then swung lengthwise between two supports made of sticks, placed thus × in front of a lodge which has been set apart for the purpose. In this lodge are gathered presents of all kinds, which are given out when a sufficient quantity is obtained. It is often a year and sometimes several years before this distribution is made. During all this time the roll containing the hair of the deceased is left undisturbed in front of the lodge. The gifts as they are brought in are piled in the back part of the lodge, and are not to be touched until given out. No one but men and boys are admitted to the lodge unless it be a wife of the deceased, who may go in if necessary very early in the morning. The men sit inside, as they choose, to smoke, eat, and converse. As they smoke they empty the ashes from their pipes in the center of the lodge, and they, too, are left undisturbed until after the distribution. When they eat, a portion is always placed first under the roll outside for the spirit of the deceased. No one is allowed to take this unless a large quantity is so placed, in which case it may be eaten by any persons actually in need of food, even though strangers to the dead. When the proper time comes the friends of the deceased and all to whom presents are to be given are called together to the lodge and the things are given out by the man in charge. Generally this is some near relative of the departed. The roll is now undone and small locks of the hair distributed with the other presents, which ends the ceremony.

Sometimes this "keeping the ghost" is done several times, and it is then looked upon as a repetition of the burial or putting away of the dead. During all the time before the distribution of the hair, the lodge, as well as the roll, is looked upon as in a manner sacred, but after that ceremony it becomes common again and may be used for any ordinary purpose. No relative or near friend of the dead wishes to retain anything in his possession that belonged to him while living, or to see, hear, or own anything which will remind him of the departed. Indeed, the leading idea in all their burial customs in the laying away with the dead their most valuable possessions, the giving to others what is left of his and the family property, the refusal to mention his name, &c., is to put out of mind as soon and as effectual as possible the memory of the departed.

From what has been said, however, it will be seen that they believe each person to have a spirit which continues to live after the death of the body. They have no idea of a future life in the body, but believe that after death their spirits will meet and recognize the spirits of their departed friends in the spirit land. They deem it essential to their happiness here, however, to destroy as far as practicable their recollection of the dead. They frequently speak of death as a sleep, and of the dead as asleep or having gone to sleep at such a time. These customs are gradually losing their hold upon them, and are much less generally and strictly observed than formerly.

Figure 15 furnishes a good example of scaffold burial. Figure 16, offering of food and drink to the dead. Figure 17, depositing the dead upon the scaffold.



T Sinclair & Son, lith. Phila.

Fig. 17. DEPOSITING THE CORPSE

A. Delano,* mentions as follows an example of tree-burial which he noticed in Nebraska.

* * * During the afternoon we passed a Sioux burying ground, if I may be allowed to use an Irishism. In a hackberry tree, elevated about twenty feet from the ground, a kind of rack was made of broken tent poles, and the body (for there was but one) was placed upon it, wrapped in his blanket, and a tanned buffalo skin, with his tin cup, moccasins, and various things which he had used in life, were placed upon his body, for his use in the land of spirits.

Figure 18 represents tree-burial, from a sketch drawn by my friend Dr. Washington Matthews, United States Army.

John Young, Indian agent at the Blackfeet Agency, Montana, sends the following account of tree-burial among this tribe:

Their manner of burial has always been (until recently) to inclose the dead body in robes or blankets, the best owned by the departed, closely sewed up, and then, if a male or chief, fasten in the branches of a tree so high as to be beyond the reach of wolves, and then left to slowly waste in the dry winds. If the body was that of a squaw or child, it was thrown into the underbrush or jungle, where it soon became the prey of the wild animals. The weapons, pipes, &c., of men were inclosed, and the small toys of children with them. The ceremonies were equally barbarous, the relatives cutting off, according to the depth of their grief, one or more joints of the fingers, divesting themselves of clothing even in the coldest weather, and filling the air with their lamentations. All the sewing up and burial process was conducted by the squaws, as the men would not touch nor remain in proximity to a dead body.

The following account of scaffold burial among the Gros Ventres and Mandans of Dakota is furnished by E. H. Alden, United States Indian agent at Fort Berthold:

The Gros Ventres and Mandans never bury in the ground, but always on a scaffold made of four posts about eight feet high, on which the box is placed, or, if no box is used, the body wrapped in red or blue cloth if able, or, if not, a blanket or cheapest white cloth, the tools and weapons being placed directly under the body, and there they remain forever, no Indian ever daring to touch one of them. It would be bad medicine to touch the dead or anything so placed belonging to him. Should the body by any means fall to the ground, it is never touched or replaced on the scaffold. As soon as one dies he is immediately buried, sometimes within an hour, and the friends begin howling and wailing as the process of interment goes on, and continue mourning day and night around the grave, without food sometimes three or four days. Those who mourn are always paid for it in some way by the other friends of the deceased, and those who mourn the longest are paid the most. They also show their grief and affection for the dead by a fearful cutting of their own bodies, sometimes only in part, and sometimes all over their whole flesh, and this sometimes continues for weeks. Their hair, which is worn in long braids, is also cut off to show their mourning. They seem proud of their mutilations. A young man who had just buried his mother came in boasting of, and showing his mangled legs.

According to Thomas L. McKenney,† the Chippewas of Fond du Lac, Wis., buried on scaffolds, inclosing the corpse in a box. The narrative is as follows:

One mode of burying the dead among the Chippewas is to place the coffin or box containing their remains on two cross-pieces, nailed or tied with wattap to four poles.

* Life on the Plains, 1854, p. 68. † Tour to the Lakes, 1827, p. 305.

The poles are about ten feet high. They plant near these posts the wild hop or some other kind of running vine, which spreads over and covers the coffin. I saw one of these on the island, and as I have described it. It was the coffin of a child about four years old. It was near the lodge of the sick girl. I have a sketch of it. I asked the chief why his people disposed of their dead in that way. He answered they did not like to put them out of their sight so soon by putting them under ground. Upon a platform they could see the box that contained their remains, and that was a comfort to them.

Figure 19 is copied from McKenney's picture of this form of burial. Keating* thus describes burial scaffolds:

On these scaffolds, which are from eight to ten feet high, corpses were deposited in a box made from part of a broken canoe. Some hair was suspended, which we at first mistook for a scalp, but our guide informed us that these were locks of hair torn from their heads by the relatives to testify their grief. In the center, between the four posts which supported the scaffold, a stake was planted in the ground; it was about six feet high, and bore an imitation of human figures, five of which had a design of a petticoat, indicating them to be females; the rest, amounting to seven, were naked and were intended for male figures; of the latter four were headless, showing that they had been slain; the three other male figures were unmutilated, but held a staff in their hand, which, as our guide informed us, designated that they were slaves. The post, which is an usual accompaniment to the scaffold that supports a warrior's remains, does not represent the achievements of the deceased; but those of the warriors that assembled near his remains danced the dance of the post, and related their martial exploits. A number of small bones of animals were observed in the vicinity, which were probably left there after a feast celebrated in honor of the dead.

The boxes in which the corpses were placed are so short that a man could not lie in them extended at full length, but in a country where boxes and boards are scarce this is overlooked. After the corpses have remained a certain time exposed, they are taken down and buried. Our guide, Renville, related to us that he had been a witness to an interesting, though painful, circumstance that occurred here. An Indian who resided on the Mississippi, hearing that his son had died at this spot, came up in a canoe to take charge of the remains and convey them down the river to his place of abode, but on his arrival he found that the corpse had already made such progress toward decomposition as rendered it impossible for it to be removed. He then undertook, with a few friends, to clean off the bones. All the flesh was scraped off and thrown into the stream, the bones were carefully collected into his canoe, and subsequently carried down to his residence.

Interesting and valuable from the extreme attention paid to details is the following account of a burial case discovered by Dr. George M. Sternberg, United States Army, and furnished by Dr. George A. Otis, United States Army, Army Medical Museum, Washington, D. C. It relates to the Cheyennes of Kansas:

The case was found, Brevet-Major Sternberg states, on the banks of Walnut Creek, Kansas, elevated about eight feet from the ground by four notched poles, which were firmly planted in the ground. The unusual care manifested in the preparation of the case induced Dr. Sternberg to infer that some important chief was inclosed in it. Believing that articles of interest were inclosed with the body, and that their value would be enhanced if they were received at the Museum as left by the Indians, Dr. Sternberg determined to send the case unopened.

I had the case opened this morning and an inventory made of the contents. The case consisted of a cradle of interlaced branches of white willow, about six feet long,

* Long's Exped. to the St. Peter's River, 1824, p. 332.

three feet broad, and three feet high, with a flooring of buffalo thongs arranged as a net-work. This cradle was securely fastened by strips of buffalo-hide to four poles of ironwood and cottonwood, about twelve feet in length. These poles doubtless rested upon the forked extremities of the vertical poles described by Dr. Sternberg. The cradle was wrapped in two buffalo robes of large size and well preserved. On removing these an aperture eighteen inches square was found at the middle of the right side of the cradle or basket. Within appeared other buffalo robes folded about the remains, and secured by gandy-colored sashes. Five robes were successively removed, making seven in all. Then we came to a series of new blankets folded about the remains. There were five in all—two scarlet, two blue, and one white. These being removed, the next wrappings consisted of a striped white and gray sack, and of a United States Infantry overcoat, like the other coverings nearly new. We had now come apparently upon the immediate envelopes of the remains, which it was now evident must be those of a child. These consisted of three robes, with hoods very richly ornamented with bead-work. These robes or cloaks were of buffalo-calf skin about four feet in length, elaborately decorated with bead-work in stripes. The outer was covered with rows of blue and white bead-work, the second was green and yellow, and the third blue and red. All were further adorned by spherical brass bells attached all about the borders by strings of beads.

The remains with their wrappings lay upon a matting similar to that used by the Navajo and other Indians of the southern plains, and upon a pillow of dirty rags, in which were folded a bag of red paint, bits of antelope skin, bunches of straps, buckles, &c. The three bead-work hooded cloaks were now removed, and then we successively unwrapped a gray woolen double shawl, five yards of blue cassimere, six yards of red calico, and six yards of brown calico, and finally disclosed the remains of a child, probably about a year old, in an advanced stage of decomposition. The cadaver had a beaver-cap ornamented with disks of copper containing the bones of the cranium, which had fallen apart. About the neck were long wampum necklaces, with *Dentalium*, *Unionidæ*, and *Auriculæ*, interspersed with beads. There were also strings of the pieces of *Haliotis* from the Gulf of California, so valued by the Indians on this side of the Rocky Mountains. The body had been elaborately dressed for burial, the costume consisting of a red-flannel cloak, a red tunic, and frock-leggins adorned with bead-work, yarn stockings of red and black worsted, and deer-skin bead-work moccasins. With the remains were numerous trinkets, a porcelain image, a China vase, strings of beads, several toys, a pair of mittens, a fur collar, a pouch of the skin of *Putorius vison*, &c.

Another extremely interesting account of scaffold-burial, furnished by Dr. L. S. Turner, United States Army, Fort Peck, Mont., and relating to the Sioux, is here given entire, as it refers to certain curious mourning observances which have prevailed to a great extent over the entire globe:

The Dakotas bury their dead in the tops of trees when limbs can be found sufficiently horizontal to support scaffolding on which to lay the body, but as such growth is not common in Dakota, the more general practice is to lay them upon scaffolds from seven to ten feet high and out of the reach of carniverous animals, as the wolf. These scaffolds are constructed upon four posts set into the ground something after the manner of the rude drawing which I inclose. Like all labors of a domestic kind, the preparation for burial is left to the women, usually the old women. The work begins as soon as life is extinct. The face, neck, and hands are thickly painted with vermilion, or a species of red earth found in various portions of the Territory when the vermilion of the traders cannot be had. The clothes and personal trinkets of the deceased ornament the body. When blankets are available, it is then wrapped in one, all parts of the body being completely enveloped. Around this a dressed skin of buffalo is then securely wrapped, with the flesh side out, and the whole securely bound with thongs

of skins, either raw or dressed; and for ornament, when available, a bright-red blanket envelopes all other coverings, and renders the general scene more picturesque until dimmed by time and the elements. As soon as the scaffold is ready, the body is borne by the women, followed by the female relatives, to the place of final deposit, and left prone in its secure wrappings upon this airy bed of death. This ceremony is accompanied with lamentations so wild and weird that one must see and hear in order to appreciate. If the deceased be a brave, it is customary to place upon or beneath the scaffold a few buffalo-heads which time has rendered dry and inoffensive; and if he has been brave in war some of his implements of battle are placed on the scaffold or securely tied to its timbers. If the deceased has been a chief, or a soldier related to his chief, it is not uncommon to slay his favorite pony and place the body beneath the scaffold, under the superstition, I suppose, that the horse goes with the man. As illustrating the propensity to provide the dead with the things used while living, I may mention that some years ago I loaned to an old man a delft urinal for the use of his son, a young man who was slowly dying of a wasting disease. I made him promise faithfully that he would return it as soon as his son was done using it. Not long afterwards the urinal graced the scaffold which held the remains of the dead warrior, and as it has not to this day been returned I presume the young man is not done using it.

The mourning customs of the Dakotas, though few of them appear to be of universal observance, cover considerable ground. The hair, never cut under other circumstances, is cropped off even with the neck, and the top of the head and forehead, and sometimes nearly the whole body, are smeared with a species of white earth resembling chalk, moistened with water. The lodge, teepee, and all the family possessions except the few shabby articles of apparel worn by the mourners, are given away and the family left destitute. Thus far the custom is universal or nearly so. The wives, mother, and sisters of a deceased man, on the first, second, or third day after the funeral, frequently throw off their moccasins and leggins and gash their legs with their butcher-knives, and march through the camp and to the place of burial with bare and bleeding extremities, while they chant or wail their dismal songs of mourning. The men likewise often gash themselves in many places, and usually seek the solitude of the higher point on the distant prairie, where they remain fasting, smoking, and wailing out their lamentations for two or three days. A chief who had lost a brother once came to me after three or four days of mourning in solitude almost exhausted from hunger and bodily anguish. He had gashed the outer side of both lower extremities at intervals of a few inches all the way from the ankles to the top of the hips. His wounds had inflamed from exposure, and were suppurating freely. He assured me that he had not slept for several days or nights. I dressed his wounds with a soothing ointment, and gave him a full dose of an effective anodyne, after which he slept long and refreshingly, and awoke to express his gratitude and shake my hand in a very cordial and sincere manner. When these harsher inflictions are not resorted to, the mourners usually repair daily for a few days to the place of burial, toward the hour of sunset, and chant their grief until it is apparently assuaged by its own expression. This is rarely kept up for more than four or five days, but is occasionally resorted to, at intervals, for weeks, or even months, according to the mood of the bereft. I have seen few things in life so touching as the spectacle of an old father going daily to the grave of his child, while the shadows are lengthening, and pouring out his grief in wails that would move a demon, until his figure melts with the gray twilight, when, silent and solemn, he returns to his desolate family. The weird effect of this observance is sometimes heightened, when the deceased was a grown-up son, by the old man kindling a little fire near the head of the scaffold, and varying his lamentations with smoking in silence. The foregoing is drawn from my memory of personal observances during a period of more than six years' constant intercourse with several subdivisions of the Dakota Indians. There may be much which memory has failed to recall upon a brief consideration.

T. Sinclair & Son, Del. Phila.

Fig. 20 SCARIFICATION AT BURIAL

Figure 20 represents scarification as a form of grief-expression for the dead.

Perhaps a brief review of Dr. Turner's narrative may not be deemed inappropriate here.

Supplying food to the dead is a custom which is known to be of great antiquity; in some instances, as among the ancient Romans, it appears to have been a sacrificial offering, for it usually accompanied cremation, and was not confined to food alone, for spices, perfumes, oil, &c., were thrown upon the burning pile. In addition to this, articles supposed or known to have been agreeable to the deceased were also consumed. The Jews did the same, and in our own time the Chinese, Caribs, and many of the tribes of North American Indians followed these customs. The cutting of hair as a mourning observance is of very great antiquity, and Tegg relates that among the ancients whole cities and countries were shaved (*sic*) when a great man died. The Persians not only shaved themselves on such occasions, but extended the same process to their domestic animals, and Alexander, at the death of Hephæstin, not only cut off the manes of his horses and mules, but took down the battlements from the city walls, that even towns might seem in mourning and look bald. Scarifying and mutilating the body has prevailed from a remote period of time, having possibly replaced, in the process of evolution, to a certain extent, the more barbarous practice of absolute personal sacrifice. In later days, among our Indians, human sacrifices have taken place to only a limited extent, but formerly many victims were immolated, for at the funerals of the chiefs of the Florida and Carolina Indians all the male relatives and wives were slain, for the reason, according to Gallatin, that the hereditary dignity of Chief or Great Sun descended, as usual, by the female line, and he, as well as all other members of his clan, whether male or female, could marry only persons of an inferior clan. To this day mutilation of the person among some tribes of Indians is usual. The sacrifice of the favorite horse or horses is by no means peculiar to our Indians, for it was common among the Romans, and possibly even among the men of the Reindeer period, for at Solutré, in France, the writer saw horses' bones exhumed from the graves examined in 1873. The writer has frequently conversed with Indians upon this subject, and they have invariably informed him that when horses were slain great care was taken to select the poorest of the band.

Tree-burial was not uncommon among the nations of antiquity, for the Colchiens enveloped their dead in sacks of skin and hung them to trees; the ancient Tartars and Scythians did the same. With regard to the use of scaffolds and trees as places of deposit for the dead, it seems somewhat curious that the tribes who formerly occupied the eastern portion of our continent were not in the habit of burying in this way, which, from the abundance of timber, would have been a much easier method than the ones in vogue, while the western tribes, living

in sparsely-wooded localities, preferred the other. If we consider that the Indians were desirous of preserving their dead as long as possible, the fact of their dead being placed in trees and scaffolds would lead to the supposition that those living on the plains were well aware of the desiccating property of the dry air of that arid region. This desiccation would pass for a kind of mummification.

The particular part of the mourning ceremonies, which consisted in loud cries and lamentations, may have had in early periods of time a greater significance than that of a mere expression of grief or woe, and on this point Bruhier* seems quite positive, his interpretation being that such cries were intended to prevent premature burial. He gives some interesting examples, which may be admitted here:

> The Caribs lament loudly, their wailings being interspersed with comical remarks and questions to the dead as to why he preferred to leave this world, having everything to make life comfortable. They place the corpse on a little seat in a ditch or grave four or five feet deep, and for ten days they bring food, requesting the corpse to eat. Finally, being convinced that the dead will neither eat nor return to life, they throw the food on the head of the corpse and fill up the grave.

When one died among the Romans, the nearest relatives embraced the body, closed the eyes and mouth, and when one was about to die received the last words and sighs, and then loudly called the name of the dead, finally bidding an eternal adieu. This ceremony of calling the deceased by name was known as the *conclamation*, and was a custom anterior even to the foundation of Rome. One dying away from home was immediately removed thither, in order that this might be performed with greater propriety. In Picardy, as late as 1743, the relatives threw themselves on the corpse and with loud cries called it by name, and up to 1855 the Moravians of Pennsylvania, at the death of one of their number, performed mournful musical airs on brass instruments from the village church steeple and again at the grave.† This custom, however, was probably a remnant of the ancient funeral observances, and not to prevent premature burial, or, perhaps, was intended to scare away bad spirits.

W. L. Hardisty‡ gives a curious example of log-burial in trees, relating to the Loucheux of British America:

> They inclose the body in a neatly-hollowed piece of wood, and secure it to two or more trees, about six feet from the ground. A log about eight feet long is first split in two, and each of the parts carefully hollowed out to the required size. The body is then inclosed and the two pieces well lashed together, preparatory to being finally secured, as before stated, to the trees.

The American Indians are by no means the only savages employing scaffolds as places of deposit for the dead, for Wood§ gives a number of examples of this mode of burial.

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* L'incertitude des signes de la Mort, 1742, tome i, p. 475, *et seq.*

† The writer is informed by Mr. John Henry Boner that this custom still prevails not only in Pennsylvania, but at the Moravian settlement of Salem, N. C.

‡ Rep. Smithsonian Inst., 1866, p. 319.

§ Uncivilized Races of the World, 1874, v. ii, p. 774, *et seq.*

Fig. 21 AUSTRALIAN SCAFFOLD BURIAL

T. Stewart & Son, Lith. Phila.

Fig 22 PREPARING THE DEAD

In some parts of Australia the natives, instead of consuming the body by fire, or hiding it in caves or in graves, make it a peculiarly conspicuous object. Should a tree grow favorably for their purpose, they will employ it as the final resting place for the dead body. Lying in its canoe coffin, and so covered over with leaves and grass that its shape is quite disguised, the body is lifted into a convenient fork of the tree and lashed to the boughs by native ropes. No further care is taken of it, and if in process of time it should be blown out of the tree, no one will take the trouble of replacing it.

Should no tree be growing in the selected spot, an artificial platform is made for the body, by fixing the ends of stout branches in the ground and connecting them at their tops by smaller horizontal branches. Such are the curious tombs which are represented in the illustration. * * * These strange tombs are mostly placed among the reeds, so that nothing can be more mournful than the sound of the wind as it shakes the reeds below the branch in which the corpse is lying. The object of this aerial tomb is evident enough, namely, to protect the corpse from the dingo, or native dog. That the ravens and other carrion-eating birds should make a banquet upon the body of the dead man does not seem to trouble the survivors in the least, and it often happens that the traveler is told by the croak of the disturbed ravens that the body of a dead Australian is lying in the branches over his head.

The aerial tombs are mostly erected for the bodies of old men who have died a natural death; but when a young warrior has fallen in battle the body is treated in a very different manner. A moderately high platform is erected, and upon this is seated the body of the dead warrior with the face toward the rising sun. The legs are crossed and the arms kept extended by means of sticks. The fat is then removed, and after being mixed with red ochre is rubbed over the body, which has previously been carefully denuded of hair, as is done in the ceremony of initiation. The legs and arms are covered with zebra-like stripes of red, white, and yellow, and the weapons of the dead man are laid across his lap.

The body being thus arranged, fires are lighted under the platform, and kept up for ten days or more, during the whole of which time the friends and mourners remain by the body, and are not permitted to speak. Sentinels relieve each other at appointed intervals, their duty being to see that the fires are not suffered to go out, and to keep the flies away by waving leafy boughs or bunches of emu feathers. When a body has been treated in this manner it becomes hard and mummy-like, and the strongest point is that the wild dogs will not touch it after it has been so long smoked. It remains sitting on the platform for two months or so, and is then taken down and buried, with the exception of the skull, which is made into a drinking-cup for the nearest relative. * * *

This mode of mummifying resembles somewhat that already described as the process by which the Virginia kings were preserved from decomposition.

Figs. 21 and 22 represent the Australian burials described, and are after the original engravings in Wood's work. The one representing scaffold-burial resembles greatly the scaffolds of our own Indians.

With regard to the use of scaffolds as places of deposit for the dead, the following theories by Dr. W. Gardner, United States Army, are given:

If we come to inquire why the American aborigines placed the dead bodies of their relatives and friends in trees, or upon scaffolds resembling trees, instead of burying them in the ground, or burning them and preserving their ashes in urns, I think we can answer the inquiry by recollecting that most if not all the tribes of American Indians, as well as other nations of a higher civilization, believed that the human soul, spirit, or immortal part was of the form and nature of a bird, and as these are essen-

tially arboreal in their habits, it is quite in keeping to suppose that the *soul-bird* would have readier access to its former home or dwelling-place if it was placed upon a tree or scaffold than if it was buried in the earth; moreover, from this lofty eyrie the souls of the dead could rest secure from the attacks of wolves or other profane beasts, and guard like sentinels the homes and hunting-grounds of their loved ones.

This statement is given because of a corroborative note in the writer's possession, but he is not prepared to admit it as correct without further investigation.

PARTIAL SCAFFOLD BURIAL AND OSSUARIES.

Under this heading may be placed the burials which consisted in first depositing the bodies on scaffolds, where they were allowed to remain for a variable length of time, after which the bones were cleaned and deposited either in the earth or in special structures, called by writers "bone-houses." Roman* relates the following concerning the Choctaws:

The following treatment of the dead is very strange. * * * As soon as the deceased is departed, a stage is erected (as in the annexed plate is represented) and the corpse is laid on it and covered with a bear-skin; if he be a man of note, it is decorated, and the poles painted red with vermillion and bear's oil; if a child, it is put upon stakes set across; at this stage the relations come and weep, asking many questions of the corpse, such as, why he left them? did not his wife serve him well? was he not contented with his children? had he not corn enough? did not his land produce sufficient of everything? was he afraid of his enemies? &c., and this accompanied by loud howlings; the women will be there constantly, and sometimes, with the corrupted air and heat of the sun, faint so as to oblige the bystanders to carry them home; the men will also come and mourn in the same manner, but in the night or at other unseasonable times when they are least likely to be discovered.

The stage is fenced round with poles; it remains thus a certain time, but not a fixed space; this is sometimes extended to three or four months, but seldom more than half that time. A certain set of venerable old Gentlemen, who wear very long nails as a distinguishing badge on the thumb, fore, and middle finger of each hand, constantly travel through the nation (when i was there i was told there were but five of this respectable order) that one of them may acquaint those concerned, of the expiration of this period, which is according to their own fancy; the day being come, the friends and relations assemble near the stage, a fire is made, and the respectable operator, after the body is taken down, with his nails tears the remaining flesh off the bones, and throws it with the entrails into the fire, where it is consumed; then he scrapes the bones and burns the scrapings likewise; the head being painted red with vermillion is with the rest of the bones put into a neatly made chest (which for a Chief is also made red) and deposited in the loft of a hut built for that purpose, and called bone house; each town has one of these; after remaining here one year or thereabouts, if he be a man of any note, they take the chest down, and in an assembly of relations and friends they weep once more over him, refresh the colour of the head, paint the box, and then deposit him to lasting oblivion.

An enemy and one who commits suicide is buried under the earth as one to be directly forgotten and unworthy the above ceremonial obsequies and mourning.

Hist. of Florida, 1775, p. 88.

Jones* quotes one of the older writers, as follows, regarding the Natchez tribe:

Among the Natchez the dead were either inhumed or placed in tombs. These tombs were located within or very near their temples. They rested upon four forked sticks fixed fast in the ground, and were raised some three feet above the earth. About eight feet long and a foot and a half wide, they were prepared for the reception of a single corpse. After the body was placed upon it, a basket-work of twigs was woven around and covered with mud, an opening being left at the head, through which food was presented to the deceased. When the flesh had all rotted away, the bones were taken out, placed in a box made of canes, and then deposited in the temple. The common dead were mourned and lamented for a period of three days. Those who fell in battle were honored with a more protracted and grievous lamentation.

Bartram† gives a somewhat different account from Roman of burial among the Choctaws of Carolina:

The Chactaws pay their last duties and respect to the deceased in a very different manner. As soon as a person is dead, they erect a scaffold 18 or 20 feet high in a grove adjacent to the town, where they lay the corps, lightly covered with a mantle; here it is suffered to remain, visited and protected by the friends and relations, until the flesh becomes putrid, so as easily to part from the bones; then undertakers, who make it their business, carefully strip the flesh from the bones, wash and cleanse them, and when dry and purified by the air, having provided a curiously-wrought chest or coffin, fabricated of bones and splints, they place all the bones therein, which is deposited in the bone-house, a building erected for that purpose in every town; and when this house is full a general solemn funeral takes place; when the nearest kindred or friends of the deceased, on a day appointed, repair to the bone-house, take up the respective coffins, and, following one another in order of seniority, the nearest relations and connections attending their respective corps, and the multitude following after them, all as one family, with united voice of alternate allelujah and lamentation, slowly proceeding on to the place of general interment, when they place the coffins in order, forming a pyramid;‡ and, lastly, cover all over with earth, which raises a conical hill or mount; when they return to town in order of solemn procession, concluding the day with a festival, which is called the feast of the dead.

Morgan§ also alludes to this mode of burial:

The body of the deceased was exposed upon a bark scaffolding erected upon poles or secured upon the limbs of trees, where is was left to waste to a skeleton. After this had been effected by the process of decomposition in the open air, the bones were removed either to the former house of the deceased, or to a small bark-house by its side, prepared for their reception. In this manner the skeletons of the whole family were preserved from generation to generation by the filial or parental affection of the living. After the lapse of a number of years, or in a season of public insecurity, or on the eve of abandoning a settlement, it was customary to collect these skeletons from the whole community around and consign them to a common resting-place.

To this custom, which is not confined to the Iroquois, is doubtless to be ascribed the burrows and bone-mounds which have been found in such numbers in various

*Antiquities of the Southern Indians, 1873, p. 105.

† Bartram's Travels, 1791, p. 516.

‡ "Some ingenious men whom I have conversed with have given it as their opinion that all those pyramidal artificial hills, usually called Indian mounds, were raised on this occasion, and are generally sepulchers. However, I am of different opinion."

§ League of the Iroquois, 1851, p. 173.

parts of the country. On opening these mounds the skeletons are usually found arranged in horizontal layers, a conical pyramid, those in each layer radiating from a common center. In other cases they are found placed promiscuously.

Dr. D. G. Brinton* likewise gives an account of the interment of collected bones:

East of the Mississippi nearly every nation was accustomed at stated periods—usually once in eight or ten years—to collect and clean the osseous remains of those of its number who had died in the intervening time, and inter them in one common sepulcher, lined with choice furs, and marked with a mound of wood, stone, or earth. Such is the origin of those immense tumuli filed with the mortal remains of nations and generations, which the antiquary, with irreverent curiosity, so frequently chances upon in all portions of our territory. Throughout Central America the same usage obtained in various localities, as early writers and existing monuments abundantly testify. Instead of interring the bones, were they those of some distinguished chieftain, they were deposited in the temples or the council-houses, usually in small chests of canes or splints. Such were the charnel-houses which the historians of De Soto's expedition so often mention, and these are the "arks" Adair and other authors who have sought to trace the decent of the Indians from the Jews have likened to that which the ancient Israelites bore with them in their migration.

A widow among the Tahkalis was obliged to carry the bones of her deceased husband wherever she went for four years, preserving them in such a casket, handsomely decorated with feathers (Rich. Arc. Exp., p. 260). The Caribs of the mainland adopted the custom for all, without exception. About a year after death the bones were cleaned, bleached, painted, wrapped in odorous balsams, placed in a wicker basket, and kept suspended from the door of their dwelling (Gumilla Hist. del Orinoco I, pp. 199, 202, 204). When the quantity of these heirlooms became burdensome they were removed to some inaccessible cavern and stowed away with reverential care.

George Catlin† describes what he calls the "Golgothas" of the Mandans:

There are several of these golgothas, or circles of twenty or thirty feet in diameter, and in the center of each ring or circle is a little mound of three feet high, on which uniformly rest two buffalo skulls (a male and female), and in the center of the little mound is erected "a medicine pole," of about twenty feet high, supporting many curious articles of mystery and superstition, which they suppose have the power of guarding and protecting this sacred arrangement.

Here, then, to this strange place do these people again resort to evince their further affections for the dead, not in groans and lamentations, however, for several years have cured the anguish, but fond affection and endearments are here renewed, and conversations are here held and cherished with the dead. Each one of these skulls is placed upon a bunch of wild sage, which has been pulled and placed under it. The wife knows, by some mark or resemblance, the skull of her husband or her child which lies in this group, and there seldom passes a day that she does not visit it with a dish of the best-cooked food that her wigwam affords, which she sets before the skull at night, and returns for the dish in the morning. As soon as it is discovered that the sage on which the skull rests is beginning to decay, the woman cuts a fresh bunch and places the skull carefully upon it, removing that which was under it.

Independent of the above-named duties, which draw the women to this spot, they visit it from inclination, and linger upon it to hold converse and company with the dead. There is scarcely an hour in a pleasant day but more or less of these women may be seen sitting or lying by the skull of their child or husband, talking to it in the most pleasant and endearing language that they can use (as they were wont to do in former days), and seemingly getting an answer back.

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* Myths of the New World, 1868, p. 255.

† Hist. N. A. Indians, 1844, i, p. 90.

Fig. 23.—Canoe Burial.

From these accounts it may be seen that the peculiar customs which have been described by the authors cited were not confined to any special tribe or area of country, although they do not appear to have prevailed among the Indians of the northwest coast, so far as known.

SUPERTERRENE AND AERIAL BURIAL IN CANOES.

The next mode of burial to be remarked is that of deposit in canoes, either supported on posts, on the ground, or swung from trees, and is common only to the tribes inhabiting the northwest coast.

The first example given relates to the Chinooks of Washington Territory, and may be found in Swan.*

In this instance old Cartumhays, and old Mahar, a celebrated doctor, were the chief mourners, probably from being the smartest scamps among the relatives. Their duty was to prepare the canoe for the reception of the body. One of the largest and best the deceased had owned was then hauled into the woods, at some distance back of the lodge, after having been first thoroughly washed and scrubbed. Two large square holes were then cut in the bottom, at the bow and stern, for the twofold purpose of rendering the canoe unfit for further use, and therefore less likely to excite the cupidity of the whites (who are but too apt to help themselves to these depositories for the dead), and also to allow any rain to pass off readily.

When the canoe was ready, the corpse, wrapped in blankets, was brought out, and laid in it on mats previously spread. All the wearing apparel was next put in beside the body, together with her trinkets, beads, little baskets, and various trifles she had prized. More blankets were then covered over the body, and mats smoothed over all. Next, a small canoe, which fitted into the large one, was placed, bottom up, over the corpse, and the whole then covered with mats. The canoe was then raised up and placed on two parallel bars, elevated four or five feet from the ground, and supported by being inserted through holes mortised at the top of four stout posts previously firmly planted in the earth. Around these holes were then hung blankets, and all the cooking utensils of the deceased, pots, kettles, and pans, each with a hole punched through it, and all her crockery-ware, every piece of which was first cracked or broken, to render it useless; and then, when all was done, they left her to remain for one year, when the bones would be buried in a box in the earth directly under the canoe; but that, with all its appendages, would never be molested, but left to go to gradual decay.

They regard these canoes precisely as we regard coffins, and would no more think of using one than we would of using our own graveyard relics; and it is, in their view, as much of a desecration for a white man to meddle or interfere with these, to them, sacred mementoes, as it would be to us to have an Indian open the graves of our relatives. Many thoughtless white men have done this, and animosities have been thus occasioned.

Figure 23 represents this mode of burial.

From a number of other examples, the following, relating to the Twanas, and furnished by the Rev. M. Eells, missionary to the Skokomish Agency, Washington Territory, is selected:

The deceased was a woman about thirty or thirty-five years of age, dead of consumption. She died in the morning, and in the afternoon I went to the house to at-

*Northwest Coast, 1857, p. 185.

tend the funeral. She had then been placed in a Hudson's Bay Company's box for a coffin, which was about 3½ feet long, 1¾ wide, and 1½ high. She was very poor when she died, owing to her disease, or she could not have been put in this box. A fire was burning near by, where a large number of her things had been consumed, and the rest were in three boxes near the coffin. Her mother sang the mourning song, sometimes with others, and often saying: "My daughter, my daughter, why did you die?" and similar words. The burial did not take place until the next day, and I was invited to go. It was an aerial burial, in a canoe. The canoe was about 25 feet long The posts, of old Indian hewed boards, were about a foot wide. Holes were cut in these, in which boards were placed, on which the canoe rested. One thing I noticed while this was done which was new to me, but the significance of which I did not

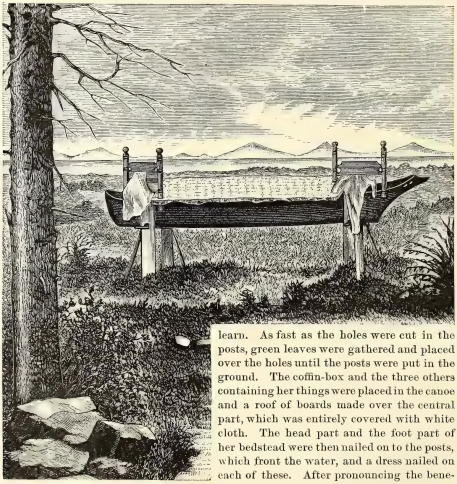


FIG. 24.—Twana Canoe-Burial.

learn. As fast as the holes were cut in the posts, green leaves were gathered and placed over the holes until the posts were put in the ground. The coffin-box and the three others containing her things were placed in the canoe and a roof of boards made over the central part, which was entirely covered with white cloth. The head part and the foot part of her bedstead were then nailed on to the posts, which front the water, and a dress nailed on each of these. After pronouncing the benediction, all left the hill and went to the beach except her father, mother, and brother, who remained ten or fifteen minutes, pounding on the canoe and mourning. They then came down and made a present to those persons who were there—a gun to one, a blanket to each of two or three others, and a dollar and a half to each of the rest, including myself, there being about fifteen persons present. Three or four of them then made short speeches, and we came home.

The reason why she was buried thus is said to be because she is a prominent woman in the tribe. In about nine months it is expected that there will be a "*pot-latch*" or distribution of money near this place, and as each tribe shall come they will send a

delegation of two or three men, who will carry a present and leave it at the grave; soon after that shall be done she will be buried in the ground. Shortly after her death both her father and mother cut off their hair as a sign of their grief.

Figure 24 is from a sketch kindly furnished by Mr. Eells, and represents the burial mentioned in his narrative.

The Clallams and Twanas, an allied tribe, have not always followed canoe-burial, as may be seen from the following account, also written by Mr. Eells, who gives the reasons why the original mode of disposing of the dead was abandoned. It is extremely interesting, and characterized by painstaking attention to detail:

I divide this subject into five periods, varying according to time, though they are somewhat intermingled.

(*a*) There are places where skulls and skeletons have been plowed up or still remain in the ground and near together, in such a way as to give good ground for the belief which is held by white residents in the region, that formerly persons were buried in the ground and in irregular cemeteries. I know of such places in Duce Waillops among the Twanas, and at Dungeness and Port Angeles among the Clallams. These graves were made so long ago that the Indians of the present day profess to have no knowledge as to who is buried in them, except that they believe, undoubtedly, that they are the graves of their ancestors. I do not know that any care has ever been exercised by any one in exhuming these skeletons so as to learn any particulars about them. It is possible, however, that these persons were buried according to the (*b*) or canoe method, and that time has buried them where they now are.

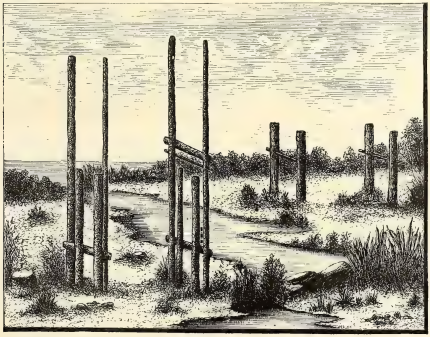


FIG. 25.—Posts for Burial Canoes.

(*b*) Formerly when a person died the body was placed in the forks of two trees and left there. There was no particular cemetery, but the person was generally left near the place where the death occurred. This Skokomish Valley is said to have been full of

canoes containing persons thus buried. What their customs were while burying, or what they placed around the dead, I am not informed, but am told that they did not take as much care then of their dead as they do now. I am satisfied, however, that they then left some articles around the dead. An old resident informs me that the Clallam Indians always bury their dead in a sitting posture.

(e) About twenty years ago gold mines were discovered in British Columbia, and boats being scarce in this region, unprincipled white men took many of the canoes in which the Indian dead had been left, emptying them of their contents. This incensed the Indians and they changed their mode of burial somewhat by burying the dead in one place, placing them in boxes whenever they could obtain them, by building scaffolds for them instead of placing them in forks of trees, and by cutting their canoes so as to render them useless, when they were used as coffins or left by the side of the dead. The ruins of one such graveyard now remain about two miles from this agency. Nearly all the remains were removed a few years ago.

With this I furnish you the outlines of such graves which I have drawn. Fig. 25 shows that at present only one pair of posts remains. I have supplied the other pair as they evidently were.

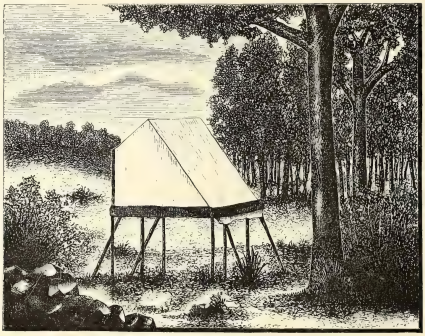


FIG. 26.—Tent on Scaffold.

Figure 26 is a recent grave at another place. That part which is covered with board and cloth incloses the coffin, which is on a scaffold.

As the Indians have been more in contact with the whites they have learned to bury in the ground, and this is the most common method at the present time. There are cemeteries everywhere where Indians have resided any length of time. After a person has died a coffin is made after the cheaper kinds of American ones, the body is placed in it, and also with it a number of articles, chiefly cloth or clothes, though occasionally money. I lately heard of a child being buried with a twenty-dollar gold piece in each hand and another in its mouth, but I am not able to vouch for the truth of it. As a general thing, money is too valuable with them for this purpose, and there is too much temptation for some one to rob the grave when this is left in it.

(*d*) The grave is dug after the style of the whites, and the coffin then placed in it. After it has been covered, it is customary, though not universal, to build some kind of

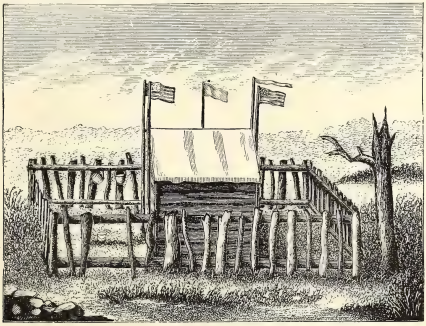


FIG. 27.—House-Burial.

an inclosure over it or around it, in the shape of a small house, shed, lodge, or fence. These are from 2 to 12 feet high, from 2 to 6 feet wide, and from 5 to 12 feet long. Some

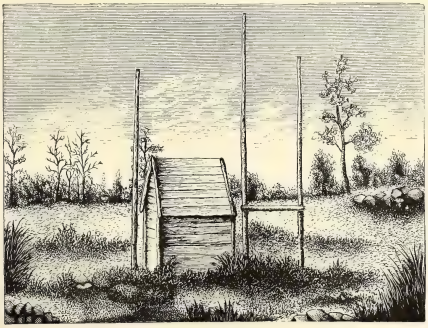


FIG. 28.—House-Burial.

of these are so well inclosed that it is impossible to see within, and some are quite open. Occasionally a window is placed in the front side. Sometimes these inclosures are

covered with cloth, which is generally white, sometimes partly covered, and some have none. Around the grave, both outside and inside of the inclosure, various articles are placed, as guns, canoes, dishes, pails, cloth, sheets, blankets, beads, tubs, lamps, bows, mats, and occasionally a roughly-carved human image rudely painted. It is said that around and in the grave of one Clallam chief, buried a few years ago, $500 worth of such things were left. Most of these articles are cut or broken so as to render them valueless to man and to prevent their being stolen. Poles are also often erected, from 10 to 30 feet long, on which American flags, handkerchiefs, clothes, and cloths of various colors are hung. A few graves have nothing of this kind. On some graves these things are renewed every year or two. This depends mainly on the number of relatives living and the esteem in which they hold the deceased.

The belief exists that as the body decays spirits carry it away particle by particle to the spirit of the deceased in the spirit land, and also as these articles decay they are also carried away in a similar manner. I have never known of the placing food near a grave. Figures 27 and 28 will give you some idea of this class of graves. Figure 27 has a paling fence 12 feet square around it. Figure 28 is simply a frame over a grave where there is no enclosure.

(*c*) *Civilized mode.*—A few persons, of late, have fallen almost entirely into the American custom of burying, building a simple paling fence around it, but placing no articles around it; this is more especially true of the Clallams.

FUNERAL CEREMONIES.

In regard to the funeral ceremonies and mourning observances of sections (*a*) and (*b*) of the preceding subject I know nothing. In regard to (*c*) and (*d*), they begin to mourn, more especially the women, as soon as a person dies. Their mourning song consists principally of the sounds represented by the three English notes mi mi, do do, la la; those who attend the funeral are expected to bring some articles to place in the coffin or about the grave as a token of respect for the dead. The articles which I have seen for this purpose have been cloth of some kind; a small piece of cloth is returned by the mourners to the attendants as a token of remembrance. They bury much sooner after death than white persons do, generally as soon as they can obtain a coffin. I know of no other native funeral ceremonies. Occasionally before being taken to the grave, I have held Christian funeral ceremonies over them, and these services increase from year to year. One reason which has rendered them somewhat backward about having these funeral services is, that they are quite superstitious about going near the dead, fearing that the evil spirit which killed the deceased will enter the living and kill them also. Especially are they afraid of having children go near, being much more fearful of the effect of the evil spirit on them than on older persons.

MOURNING OBSERVANCES.

They have no regular period, so far as I know, for mourning, but often continue it after the burial, though I do not know that they often visit the grave. If they feel the loss very much, sometimes they will mourn nearly every day for several weeks; especially is this true when they meet an old friend who has not been seen since the funeral, or when they see an article owned by the deceased which they have not seen for a long time. The only other thing of which I think, which bears on this subject, is an idea they have, that before a person dies—it may be but a short time or it may be several months—a spirit from the spirit land comes and carries off the spirit of the individual to that place. There are those who profess to discover when this is done, and if by any of their incantations they can compel that spirit to return, the person will not die, but if they are not able, then the person will become dead at heart and in time die, though it may not be for six months or even twelve. You will also find a little on this subject in a pamphlet which I wrote on the Twana Indians and which has recently been published by the Department of the Interior, under Prof. F. V. Hayden, United States Geologist.

George Gibbs* gives a most interesting account of the burial ceremonies of the Indians of Oregon and Washington Territory, which is here reproduced in its entirety, although it contains examples of other modes of burial besides that in canoes; but to separate the narrative would destroy the thread of the story:

The common mode of disposing of the dead among the fishing tribes was in canoes. These were generally drawn into the woods at some prominent point a short distance from the village, and sometimes placed between the forks of trees or raised from the ground on posts. Upon the Columbia River the Tsinūk had in particular two very noted cemeteries, a high isolated bluff about three miles below the mouth of the Cowlitz, called Mount Coffin, and one some distance above, called Coffin Rock. The former would appear not to have been very ancient. Mr. Broughton, one of Vancouver's lieutenants, who explored the river, makes mention only of *several* canoes at this place; and Lewis and Clarke, who noticed the mount, do not speak of them at all, but at the time of Captain Wilkes's expedition it is conjectured that there were at least 3,000. A fire caused by the carelessness of one of his party destroyed the whole, to the great indignation of the Indians.

Captain Belcher, of the British ship Sulphur, who visited the river in 1839, remarks: "In the year 1836 [1826] the small-pox made great ravages, and it was followed a few years since by the ague. Consequently Corpse Island and Coffin Mount, as well as the adjacent shores, were studded not only with canoes, but at the period of our visit the skulls and skeletons were strewed about in all directions." This method generally prevailed on the neighboring coasts, as at Shoal Water Bay, &c. Farther up the Columbia, as at the Cascades, a different form was adopted, which is thus described by Captain Clarke:

"About half a mile below this house, in a very thick part of the woods, is an ancient Indian burial-place; it consists of eight vaults, made of pine cedar boards, closely connected, about 8 feet square and 6 in height, the top securely covered with wide boards, sloping a little, so as to convey off the rain. The direction of all these is east and west, the door being on the eastern side, and partially stopped with wide boards, decorated with rude pictures of men and other animals. On entering we found in some of them four dead bodies, carefully wrapped in skins, tied with cords of grass and bark, lying on a mat in a direction east and west; the other vaults contained only bones, which in some of them were piled to a height of 4 feet; on the tops of the vaults and on poles attached to them hung brass kettles and frying-pans with holes in their bottoms, baskets, bowls, sea-shells, skins, pieces of cloth, hair bags of trinkets, and small bones, the offerings of friendship or affection, which have been saved by a pious veneration from the ferocity of war or the more dangerous temptation of individual gain. The whole of the walls as well as the door were decorated with strange figures cut and painted on them, and besides these were several wooden images of men, some of them so old and decayed as to have almost lost their shape, which were all placed against the sides of the vault. These images, as well as those in the houses we have lately seen, do not appear to be at all the objects of adoration in this place; they were most probably intended as resemblances of those whose decease they indicate, and when we observe them in houses they occupy the most conspicuous part, but are treated more like ornaments than objects of worship. Near the vaults which are still standing are the remains of others on the ground, completely rotted and covered with moss; and as they are formed of the most durable pine and cedar timber, there is every appearance that for a very long series of years this retired spot has been the depository for the Indians near this place."

* Cont. N. A. Ethnol., 1877, i., p. 200.

Another depository of this kind upon an island in the river a few miles above gave it the name of Sepulcher Island. The *Waitala*, a tribe of the Upper Tsinûk, whose burial place is here described, are now nearly extinct; but a number of the sepulchers still remain in different states of preservation. The position of the body, as noticed by Clarke, is, I believe, of universal observance, the head being always placed to the west. The reason assigned to me is that the road to the *mé-mel-ûs-illa-hee*, the country of the dead, is toward the west, and if they place them otherwise they would be confused. East of the Cascade Mountains the tribes whose habits are equestrian, and who use canoes only for ferriage or transportation purposes, bury their dead, usually heaping over them piles of stones, either to mark the spot or to prevent the bodies from being exhumed by the prairie wolf. Among the Yakamas we saw many of their graves placed in conspicuous points of the basaltic walls which line the lower valleys, and designated by a clump of poles planted over them, from which fluttered various articles of dress. Formerly these prairie tribes killed horses over the graves—a custom now falling into disuse in consequence of the teachings of the whites.

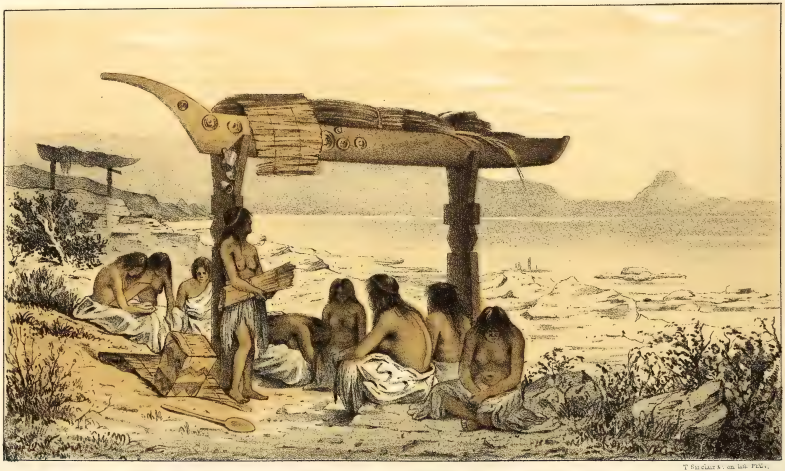
Upon Puget Sound all the forms obtain in different localities. Among the Makah of Cape Flattery the graves are covered with a sort of box, rudely constructed of boards, and elsewhere on the Sound the same method is adopted in some cases, while in others the bodies are placed on elevated scaffolds. As a general thing, however, the Indians upon the water placed the dead in canoes, while those at a distance from it buried them. Most of the graves are surrounded with strips of cloth, blankets, and other articles of property. Mr. Cameron, an English gentleman residing at Esquimalt Harbor, Vancouver Island, informed me that on his place there were graves having at each corner a large stone, the interior space filled with rubbish. The origin of these was unknown to the present Indians.

The distinctions of rank or wealth in all cases were very marked; persons of no consideration and slaves being buried with very little care or respect. Vancouver, whose attention was particularly attracted to their methods of disposing of the dead, mentions that at Port Discovery he saw baskets suspended to the trees containing the skeletons of young children, and, what is not easily explained, small square boxes, containing, apparently, food. I do not think that any of these tribes place articles of food with the dead, nor have I been able to learn from living Indians that they formerly followed that practice. What he took for such I do not understand. He also mentions seeing in the same place a cleared space recently burned over, in which the skulls and bones of a number lay among the ashes. The practice of burning the dead exists in parts of California and among the Tshimsyan of Fort Simpson. It is also pursued by the "Carriers" of New California, but no intermediate tribes, to my knowledge, follow it. Certainly those of the Sound do not at present.

It is clear from Vancouver's narrative that some great epidemic had recently passed through the country, as manifested by the quantity of human remains uncared for and exposed at the time of his visit, and very probably the Indians, being afraid, had burned a house, in which the inhabitants had perished with the dead in it. This is frequently done. They almost invariably remove from any place where sickness has prevailed, generally destroying the house also.

At Penn Cove Mr. Whidbey, one of Vancouver's officers, noticed several sepulchers formed exactly like a sentry-box. Some of them were open, and contained the skeletons of many young children tied up in baskets. The smaller bones of adults were likewise noticed, but not one of the limb bones was found, which gave rise to an opinion that these, by the living inhabitants of the neighborhood, were appropriated to useful purposes, such as pointing their arrows, spears, or other weapons.

It is hardly necessary to say that such a practice is altogether foreign to Indian character. The bones of the adults had probably been removed and buried elsewhere. The corpses of children are variously disposed of; sometimes by suspending them, at others by placing in the hollows of trees. A cemetery devoted to infants is, however, an unusual occurrence. In cases of chiefs or men of note much pomp was used in the



T. Sinclair & Son lith. Phila.

Fig. 29. CANOE BURIAL.

accompaniments of the rite. The canoes were of great size and value—the war or state canoes of the deceased. Frequently one was inverted over that holding the body, and in one instance, near Shoalwater Bay, the corpse was deposited in a small canoe, which again was placed in a larger one and covered with a third. Among the *Tsinük* and *Tsihalis* the *tamahno-üs* board of the owner was placed near him. The Puget Sound Indians do not make these *tamahno-üs* boards, but they sometimes constructed effigies of their chiefs, resembling the person as nearly as possible, dressed in his usual costume, and wearing the articles of which he was fond. One of these, representing the Skagit chief Sneestum, stood very conspicuously upon a high bank on the eastern side of Whidbey Island. The figures observed by Captain Clarke at the Cascades were either of this description or else the carved posts which had ornamented the interior of the houses of the deceased, and were connected with the superstition of the *tamahno-üs*. The most valuable articles of property were put into or hung up around the grave, being first carefully rendered unserviceable, and the living family were literally stripped to do honor to the dead. No little self-denial must have been practiced in parting with articles so precious, but those interested frequently had the least to say on the subject. The graves of women were distinguished by a cup, a Kamas stick, or other implement of their occupation, and by articles of dress.

Slaves were killed in proportion to the rank and wealth of the deceased. In some instances they were starved to death, or even tied to the dead body and left to perish thus horribly. At present this practice has been almost entirely given up, but till within a very few years it was not uncommon. A case which occurred in 1850 has been already mentioned. Still later, in 1853, Toke, a Tsinük chief living at Shoalwater Bay, undertook to kill a slave girl belonging to his daughter, who, in dying, had requested that this might be done. The woman fled, and was found by some citizens in the woods half starved. Her master attempted to reclaim her, but was soundly thrashed and warned against another attempt.

It was usual in the case of chiefs to renew or repair for a considerable length of time the materials and ornaments of the burial-place. With the common class of persons family pride or domestic affection was satisfied with the gathering together of the bones after the flesh had decayed and wrapping them in a new mat. The violation of the grave was always regarded as an offense of the first magnitude and provoked severe revenge. Captain Belcher remarks: "Great secrecy is observed in all their burial ceremonies, partly from fear of Europeans, and as among themselves they will instantly punish by death any violation of the tomb or wage war if perpetrated by another tribe, so they are inveterate and tenaceously bent on revenge should they discover that any act of the kind has been perpetrated by a white man. It is on record that part of the crew of a vessel on her return to this port (the Columbia) suffered because a person who belonged to her (but not then in her) was known to have taken a skull, which, from the process of flattening, had become an object of curiosity." He adds, however, that at the period of his visit to the river "the skulls and skeletons were scattered about in all directions; and as I was on most of their positions unnoticed by the natives, I suspect the feeling does not extend much beyond their relatives, and then only till decay has destroyed body, goods, and chattels. The chiefs, no doubt, are watched, as their canoes are repainted, decorated, and greater care taken by placing them in sequestered spots."

The motive for sacrificing or destroying property on occasion of death will be referred to in treating of their religious ideas. Wailing for the dead is continued for a long time, and it seems to be rather a ceremonial performance than an act of spontaneous grief. The duty, of course, belongs to the woman, and the early morning is usually chosen for the purpose. They go out alone to some place a little distant from the lodge or camp and in a loud, sobbing voice repeat a sort of stereotyped formula; as, for instance, a mother, on the loss of her child, "*Ah seahb shed-da bud-dah ah ta bud! ad-de-dah*," "Ah chief!" "My child dead, alas!" When in dreams they see any of their deceased friends this lamentation is renewed.

With most of the Northwest Indians it was quite common, as mentioned by Mr. Gibbs, to kill or bury with the dead a living slave, who, failing to die within three days, was strangled by another slave; but the custom has also prevailed among other tribes and peoples, in many cases the individuals offering themselves as voluntary sacrifices. Bancroft states that—

In Panama, Nata, and some other districts, when a cacique died, those of his concubines that loved him enough, those that he loved ardently and so appointed, as well as certain servants, killed themselves and were interred with him. This they did in order that they might wait upon him in the land of spirits.

It is well known to all readers of history to what an extreme this revolting practice has prevailed in Mexico, South America, and Africa.

AQUATIC BURIAL.

As a confirmed rite or ceremony, this mode of disposing of the dead has never been followed by any of our North American Indians, although occasionally the dead have been disposed of by sinking in springs or water-courses, by throwing into the sea, or by setting afloat in canoes. Among the nations of antiquity the practice was not uncommon, for we are informed that the Ichthyophagi, or fish-eaters, mentioned by Ptolemy, living in a region bordering on the Persian Gulf, invariably committed their dead to the sea, thus repaying the obligations they had incurred to its inhabitants. The Lotophagians did the same, and the Hyperboreans, with a commendable degree of forethought for the survivors, when ill or about to die, threw themselves into the sea. The burial of Balder "the beautiful," it may be remembered, was in a highly decorated ship, which was pushed down to the sea, set on fire, and committed to the waves. The Itzas of Guatemala, living on the islands of Lake Peten, according to Bancroft, are said to have thrown their dead into the lake for want of room. The Indians of Nootka Sound and the Chinooks were in the habit of thus getting rid of their dead slaves, and, according to Timberlake, the Cherokees of Tennessee "seldom bury the dead, but throw them into the river."

The Alibamans, as they were called by Bossu, denied the rite of sepulture to suicides; they were looked upon as cowards, and their bodies thrown into a river. The Rev. J. G. Wood* states that the Obongo or African tribe take the body to some running stream, the course of which has been previously diverted. A deep grave is dug in the bed of the stream, the body placed in it, and covered over carefully. Lastly, the stream is restored to its original course, so that all traces of the grave are soon lost.

The Kavague also bury their common people, or wanjambo, by simply sinking the body in some stream.

* Uncivilized Races of the World, 1870, vol. i, p. 483.

Historians inform us that Alaric was buried in a manner similar to that employed by the Obongo, for in 410, at Cosença, a town of Calabria, the Goths turned aside the course of the river Vasento, and having made a grave in the midst of its bed, where its course was most rapid, they interred their king with a prodigious amount of wealth and riches. They then caused the river to resume its regular course, and destroyed all persons who had been concerned in preparing this romantic grave.

A later example of water-burial is that afforded by the funeral of De Soto. Dying in 1542, his remains were inclosed in a wooden chest well weighted, and committed to the turbid and tumultuous waters of the Mississippi.

After a careful search for well-authenticated instances of burial, aquatic and semi-aquatic, among North American Indians, but two have been found, which are here given. The first relates to the Gosh-Utes, and is by Capt. J. H. Simpson:*

Skull Valley, which is a part of the Great Salt Lake Desert, and which we have crossed to-day, Mr. George W. Bean, my guide over this route last fall, says derives its name from the number of skulls which have been found in it, and which have arisen from the custom of the Goshute Indians burying their dead in springs, which they sink with stones or keep down with sticks. He says he has actually seen the Indians bury their dead in this way near the town of Provo, where he resides.

FIG. 30.—Mourning-Cradle.

As corroborative of this statement, Captain Simpson mentions in another part of the volume that, arriving at a spring one evening, they were obliged to dig out the skeleton of an Indian from the mud at the bottom before using the water.

This peculiar mode of burial is entirely unique, so far as known, and but from the well-known probity of the relator might well be questioned, especially when it is remembered that in the country spoken of water is quite scarce and Indians are careful not to pollute the streams or springs near which they live. Conjecture seems useless to establish a reason for this disposition of the dead, unless we are inclined to attribute it to the natural indolence of the savage, or a desire to poison the springs for white persons.

The second example is by George Catlin,† and relates to the Chinook:

* * * This little cradle has a strap which passes over the woman's forehead whilst the cradle rides on her back, and if the child dies during its subjection to this rigid

* Exploration Great Salt Lake Valley, Utah, 1859, p. 48.

† Hist. North American Indians, 1844, vol. ii, p. 141.

mode its cradle becomes its coffin, forming a little canoe, in which it lies floating on the water in some sacred pool, where they are often in the habit of fastening their canoes containing the dead bodies of the old and young, or, which is often the case, elevated into the branches of trees, where their bodies are left to decay and their bones to dry whilst they are bandaged in many skins and curiously packed in their canoes, with paddles to propel and ladles to bale them out, and provisions to last and pipes to smoke as they are performing their "long journey after death to their contemplated hunting grounds," which these people think is to be performed in their canoes.

Figure 30, after Catlin, is a representation of a mourning-cradle. Figure 31 represents the sorrowing mother committing the body of her dead child to the mercy of the elements.

LIVING SEPULCHERS.

This is a term quaintly used by the learned M. Pierre Muret to express the devouring of the dead by birds and animals or the surviving friends and relatives. Exposure of the dead to animals and birds has already been mentioned, but in the absence of any positive proof, it is not believed that the North American Indians followed the custom, although cannibalism may have prevailed to a limited extent. It is true that a few accounts are given by authors, but these are considered apochryphal in character, and the one mentioned is only offered to show how credulous were the early writers on American natives.

That such a means of disposing of the dead was not in practice is somewhat remarkable when we take into consideration how many analogies have been found in comparing old and new world funeral observances, and the statements made by Bruhier, Lafitau, Muret, and others, who give a number of examples of this peculiar mode of burial.

For instance, the Tartars sometimes ate their dead, and the Massageties, Padæans, Derbices, and Effedens did the same, having previously strangled the aged and mixed their flesh with mutton. Horace and Tertulian both affirm that the Irish and ancient Britons devoured the dead, and Lafitau remarks that certain Indians of South America did the same, esteeming this mode of disposal more honorable and much to be preferred than to rot and be eaten by worms.

J. G. Wood, in his work already quoted, states that the Fans of Africa devour their dead, but this disposition is followed only for the common people, the kings and chiefs being buried with much ceremony.

The following extract is from Lafitau:*

Dans l'Amérique Méridionale quelque Peuples décharnent les corps de leurs Guerriers et les mangent leurs chairs, ainsi que je viens de le dire, et après les avoir consumées, ils conservent pendant quelque temps leurs cadavres avec respect dans leurs Cabanes, et il portent ces squeletes dans les combats en guise d'Étendard, pour ranimer leur courage par cette vûe et inspirer de la terreur à leurs ennemis. * * *

* Mœurs des Sauvages, 1724, tome ii, p. 406.

Il est vrai qu'il y en a qui font festin des cadavres de leurs parens; mais il est faux qu'elles le mettent à mort dans leur vieillesse, pour avoir le plaisir de se nourrir de leur chair, et d'en faire un repas. Quelques Nations de l'Amérique Méridionale, qui ont encore cette coûtume de manger les corps morts de leurs parens, n'en usent ainsi que par piété, piété mal entenduë à la verité, mais piété colorée néanmoins par quelque ombre de raison; car ils croyent leur donner une sépulture bien plus honorable.

To the credit of our savages, this barbarous and revolting practice is not believed to have been practiced by them.

MOURNING, SACRIFICE, FEASTS, FOOD, DANCES, SONGS, GAMES, POSTS, FIRES, AND SUPERSTITIONS IN CONNECTION WITH BURIAL.

The above subjects are coincident with burial, and some of them, particularly mourning, have been more or less treated of in this paper, yet it may be of advantage to here give a few of the collected examples, under separate heads.

MOURNING.

One of the most carefully described scenes of mourning at the death of a chief of the Crows is related in the life of Beckwourth,* who for many years lived among this people, finally attaining great distinction as a warrior.

I dispatched a herald to the village to inform them of the head chief's death, and then, burying him according to his directions, we slowly proceeded homewards. My very soul sickened at the contemplation of the scenes that would be enacted at my arrival. When we drew in sight of the village, we found every lodge laid prostrate. We entered amid shrieks, cries, and yells. Blood was streaming from every conceivable part of the bodies of all who were old enough to comprehend their loss. Hundreds of fingers were dismembered; hair torn from the head lay in profusion about the paths; wails and moans in every direction assailed the ear, where unrestrained joy had a few hours before prevailed. This fearful mourning lasted until evening of the next day. * * *

A herald having been dispatched to our other villages to acquaint them with the death of our head chief, and request them to assemble at the Rose Bud, in order to meet our village and devote themselves to a general time of mourning, there met, in conformity to this summons, over ten thousand Crows at the place indicated. Such a scene of disorderly, vociferous mourning, no imagination can conceive nor any pen portray. Long Hair cut off a large roll of his hair; a thing he was never known to do before. The cutting and hacking of human flesh exceeded all my previous experience; fingers were dismembered as readily as twigs, and blood was poured out like water. Many of the warriors would cut two gashes nearly the entire length of their arm; then, separating the skin from the flesh at one end, would grasp it in their other hand, and rip it asunder to the shoulder. Others would carve various devices upon

*Autobiography of James Beckwourth, 1856, p. 269.

their breasts and shoulders, and raise the skin in the same manner to make the scars show to advantage after the wound was healed. Some of their mutilations were ghastly, and my heart sickened to look at them, but they would not appear to receive any pain from them.

It should be remembered that many of Beckwourth's statements are to be taken *cum grana salis.*

From I. L. Mahan, United States Indian agent for the Chippewas of Lake Superior, Red Cliff, Wisconsin, the following detailed account of mourning has been received:

There is probably no people that exhibit more sorrow and grief for their dead than they. The young widow mourns the loss of her husband; by day as by night she is heard silently sobbing; she is a constant visitor to the place of rest; with the greatest reluctance will she follow the raised camp. The friends and relatives of the young mourner will incessantly devise methods to distract her mind from the thought of her lost husband. She refuses nourishment, but as nature is exhausted she is prevailed upon to partake of food; the supply is scant, but on every occasion the best and largest proportion is deposited upon the grave of her husband. In the mean time the female relatives of the deceased have, according to custom, submitted to her charge a parcel made up of different cloths ornamented with bead-work and eagle's feathers, which she is charged to keep by her side—the place made vacant by the demise of her husband—a reminder of her widowhood. She is therefore for a term of twelve moons not permitted to wear any finery, neither is she permitted to slicken up and comb her head; this to avoid attracting attention. Once in a while a female relative of deceased, commiserating with her grief and sorrow, will visit her and voluntarily proceed to comb out the long-neglected and matted hair. With a jealous eye a vigilant watch is kept over her conduct during the term of her widowhood, yet she is allowed the privilege to marry, any time during her widowhood, an unmarried brother or cousin, or a person of the same *Dodem* [*sic*] (family mark) of her husband.

At the expiration of her term, the vows having been faithfully performed and kept, the female relatives of deceased assemble and, with greetings commensurate to the occasion, proceed to wash her face, comb her hair, and attire her person with new apparel, and otherwise demonstrating the release from her vow and restraint. Still she has not her entire freedom. If she will still refuse to marry a relative of the deceased and will marry another, she then has to purchase her freedom by giving a certain amount of goods and whatever else she might have manufactured during her widowhood in anticipation of the future now at hand. Frequently, though, during widowhood the vows are disregarded and an inclination to flirt and play courtship or form an alliance of marriage outside of the relatives of the deceased is being indulged, and when discovered the widow is set upon by the female relatives, her slick braided hair is shorn close up to the back of her neck, all her apparel and trinkets are torn from her person, and a quarrel frequently results fatally to some member of one or the other side.

Thomas L. McKenney* gives a description of the Chippewa widow which differs slightly from the one above:

I have noticed several women here carrying with them rolls of clothing. On inquiring what these imported, I learn that they *are widows* who carry them, and that these are badges of mourning. It is indispensable, when a woman of the Chippeway Nation loses her husband, for her to take of her best apparel—and the whole of it is not worth a dollar—and roll it up, and confine it by means of her husband's sashes; and if he had ornaments, these are generally put on the top of the roll, and around it is wrapped a piece of cloth. This bundle is called her husband, and it is expected that she is

*Tour to the Lakes, 1827, p. 292.

Fig 32 CHIPPEWAY WIDOW

never to be seen without it. If she walks out she takes it with her; if she sits down in her lodge, she places it by her side. This badge of widowhood and of mourning the widow is compelled to carry with her until some of her late husband's family shall call and take it away, which is done when they think she has mourned long enough, and which is generally at the expiration of a year. She is then, but not before, released from her mourning, and at liberty to marry again. She has the privilege to take this husband to the family of the deceased and leave it, but this is considered indecorous, and is seldom done. Sometimes a brother of the deceased takes the widow for his wife at the grave of her husband, which is done by a ceremony of walking her over it. And this he has a right to do; and when this is done she is not required to go into mourning; or, if she chooses, she has the right *to go to him*, and he is *bound* to support her.

I visited a lodge to-day, where I saw one of these badges. The size varies according to the quantity of clothing which the widow may happen to have. It is expected of her to put up her *best* and wear her *worst*. The "*husband*" I saw just now was 30 inches high and 18 inches in circumference.

I was told by the interpreter that he knew a woman who had been left to mourn after this fashion for years, none of her husband's family calling for the badge or token of her grief. At a certain time it was told her that some of her husband's family were passing, and she was advised to speak to them on the subject. She did so, and told them she had mourned long and was poor; that she had no means to buy clothes, and her's being all in the mourning badge, and sacred, could not be touched. She expressed a hope that her request might not be interpreted into a wish to marry; it was only made that she might be placed in a situation to get some clothes. She got for answer, that "they were going to Mackinac, and would think of it." They left her in this state of uncertainty, but on returning, and finding her faithful still, they took her "husband" and presented her with clothing of various kinds. Thus was she rewarded for her constancy and made comfortable.

The Choctaw widows mourn by never combing their hair for the term of their grief, which is generally about a year. The Chippeway men mourn by painting their faces black.

I omitted to mention that when presents are going round, the badge of mourning, this "*husband*," comes in for an equal share, as if it were the living husband.

A Chippeway mother, on losing her child, prepares an image of it in the best manner she is able, and dresses it as she did her living child, and fixes it in the kind of cradle I have referred to, and goes through the ceremonies of nursing it as if it were alive, by dropping little particles of food in the direction of its mouth, and giving it of whatever the living child partook. This ceremony also is generally observed for a year.

Figure 32 represents the Chippewa widow holding in her arms the substitute for the dead husband.

The substitution of a reminder for the dead husband, made from rags, furs, and other articles, is not confined alone to the Chippewas, other tribes having the same custom. In some instances the widows are obliged to carry around with them, for a variable period, a bundle containing the bones of the deceased consort.

Similar observances, according to Bancroft,* were followed by some of the Central American tribes of Indians, those of the Sambos and Mosquitos being as follows:

The widow was bound to supply the grave of her husband for a year, after which she took up the bones and carried them with her for another year, at last placing them upon the roof of her house, and then only was she allowed to marry again.

* Nat. Races of Pacific States, 1874, vol. i, pp. 731, 744.

On returning from the grave the property of the deceased is destroyed, the cocoa palms being cut down, and all who have taken part in the funeral undergo a lustration in the river. Relatives cut off the hair, the men leaving a ridge along the middle from the nape of the neck to the forehead. Widows, according to some old writers, after supplying the grave with food for a year take up the bones and carry them on the back in the daytime, sleeping with them at night for another year, after which they are placed at the door or upon the house-top. On the anniversary of deaths, friends of the deceased hold a feast, called *seekroe*, at which large quantities of liquor are drained to his memory. Squier, who witnessed the ceremonies on an occasion of this kind, says that males and females were dressed in *ule* cloaks fantastically painted black and white, while their faces were correspondingly streaked with red and yellow, and they performed a slow walk around, prostrating themselves at intervals and calling loudly upon the dead and tearing the ground with their hands. At no other time is the departed referred to, the very mention of his name being superstitiously avoided. Some tribes extend a thread from the house of death to the grave, carrying it in a straight line over every obstacle. Fröebel states that among the Woolwas all property of the deceased is buried with him, and that both husband and wife cut the hair and burn the hut on the death of either, placing a gruel of maize upon the grave for a certain time.

Benson* gives the following account of the Choctaws' funeral ceremonies, embracing the disposition of the body, mourning feast and dance:

Their funeral is styled by them "the last cry."

When the husband dies the friends assemble, prepare the grave, and place the corpse in it, but do not fill it up. The gun, bow and arrows, hatchet, and knife are deposited in the grave. Poles are planted at the head and the foot, upon which flags are placed; the grave is then inclosed by pickets driven in the ground. The funeral ceremonies now begin, the widow being the chief mourner. At night and morning she will go to the grave and pour forth the most piteous cries and wailings. It is not important that any other member of the family should take any very active part in the "cry," though they do participate to some extent.

The widow wholly neglects her toilet, while she daily goes to the grave during one entire *moon* from the date when the death occurred. On the evening of the last day of the moon the friends all assemble at the cabin of the disconsolate widow, bringing provisions for a sumptuous feast, which consists of corn and jerked beef boiled together in a kettle. While the supper is preparing the bereaved wife goes to the grave and pours out, with unusual vehemence, her bitter wailings and lamentations. When the food is thoroughly cooked the kettle is taken from the fire and placed in the center of the cabin, and the friends gather around it, passing the buffalo-horn spoon from hand to hand and from mouth to mouth till all have been bountifully supplied. While supper is being served, two of the oldest men of the company quietly withdraw and go to the grave and fill it up, taking down the flags. All then join in a dance, which not unfrequently is continued till morning; the widow does not fail to unite in the dance, and to contribute her part to the festivities of the occasion. This is the "*last cry*," the days of mourning are ended, and the widow is now ready to form another matrimonial alliance. The ceremonies are precisely the same when a man has lost his wife, and they are only slightly varied when any other member of the family has died. (Slaves were buried without ceremonies.)

* Life Among the Choctaws, 1860, p. 294.

SACRIFICE.

Some examples of human sacrifice have already been given in connection with another subject, but it is thought others might prove interesting. The first relates to the Natchez of Louisiana.*

When their sovereign died he was accompanied in the grave by his wives and by several of his subjects. The lesser Suns took care to follow the same custom. The law likewise condemned every Natchez to death who had married a girl of the blood of the Suns as soon as she was expired. On this occasion I must tell you the history of an Indian who was noways willing to submit to this law. His name was *Elteacteal*; he contracted an alliance with the Suns, but the consequences which this honor brought along with it had like to have proved very unfortunate to him. His wife fell sick; as soon as he saw her at the point of death he fled, embarked in a piragua on the *Mississippi*, and came to New Orleans. He put himself under the protection of M. de Bienville, the then governor, and offered to be his huntsman. The governor accepted his services, and interested himself for him with the Natchez, who declared that he had nothing more to fear, because the ceremony was past, and he was accordingly no longer a lawful prize.

Elteacteal, being thus assured, ventured to return to his nation, and, without settling among them, he made several voyages thither. He happened to be there when the Sun called the *Stung Serpent*, brother to the Great Sun, died. He was a relative of the late wife of *Elteacteal*, and they resolved to make him pay his debt. M. de Bienville had been recalled to France, and the sovereign of the Natchez thought that the protector's absence had annulled the reprieve granted to the protected person, and accordingly he caused him to be arrested. As soon as the poor fellow found himself in the hut of the grand chief of war, together with the other victims destined to be sacrificed to the *Stung Serpent*, he gave vent to the excess of his grief. The favorite wife of the late Sun, who was likewise to be sacrificed, and who saw the preparations for her death with firmness, and seemed impatient to rejoin her husband, hearing *Elteacteal's* complaints and groans, said to him: "Art thou no warrior?" He answered, "Yes; I am one." "However," said she, "thou cryest; life is dear to thee, and as that is the case, it is not good that thou shouldst go along with us; go with the women." *Elteacteal* replied: "True; life is dear to me. It would be well if I walked yet on earth till to the death of the Great Sun, and I would die with him." "Go thy way," said the favorite, "it is not fit thou shouldst go with us, and that thy heart should remain behind on earth. Once more, get away, and let me see thee no more."

Elteacteal did not stay to hear this order repeated to him; he disappeared like lightning; three old women, two of which were his relatives, offered to pay his debt; their age and their infirmities had disgusted them of life; none of them had been able to use their legs for a great while. The hair of the two that were related to *Elteacteal* was no more gray than those of women of fifty-five years in France. The other old woman was a hundred and twenty years old, and had very white hair, which is a very uncommon thing among the Indians. None of the three had a quite wrinkled skin. They were dispatched in the evening, one at the door of the *Stung Serpent*, and the other two upon the place before the temple. * * * A cord is fastened round their necks with a slip-knot, and eight men of their relations strangle them by drawing, four one way and four the other. So many are not necessary, but as they acquire nobility by such executions, there are always more than are wanting, and the operation is performed in an instant. The generosity of these women gave *Elteacteal*

* Bossu's Travels (Forster's translation), 1771, p. 38.

life again, acquired him the degree of *considered*, and cleared his honor, which he had sullied by fearing death. He remained quiet after that time, and taking advantage of what he had learned during his stay among the French, he became a juggler and made use of his knowledge to impose upon his countrymen.

The morning after this execution they made everything ready for the convoy, and the hour being come, the great master of the ceremonies appeared at the door of the hut, adorned suitably to his quality. The victims who were to accompany the deceased prince into the mansion of the spirits came forth; they consisted of the favorite wife of the deceased, of his second wife, his chancellor, his physician, his hired man, that is, his first servant, and of some old women.

The favorite went to the Great Sun, with whom there were several Frenchmen, to take leave of him; she gave orders for the Suns of both sexes that were her children to appear, and spoke to the following effect:

"Children, this is the day on which I am to tear myself from you (*sic*) arms and to follow your father's steps, who waits for me in the country of the spirits; if I were to yield to your tears I would injure my love and fail in my duty. I have done enough for you by bearing you next to my heart, and by suckling you with my breasts. You that are descended of his blood and fed by my milk, ought you to shed tears? Rejoice rather that you are *Suns* and warriors; you are bound to give examples of firmness and valor to the whole nation: go, my children, I have provided for all your wants, by procuring you friends; my friends and those of your father are yours too; I leave you amidst them; they are the French; they are tender-hearted and generous; make yourselves worthy of their esteem by not degenerating from your race; always act openly with them and never implore them with meanness.

"And you, Frenchmen," added she, turning herself towards our officers, "I recommend my orphan children to you; they will know no other fathers than you; you ought to protect them."

After that she got up; and, followed by her troop, returned to her husband's hut with a surprising firmness.

A noble woman came to join herself to the number of victims of her own accord, being engaged by the friendship she bore the *Stung Serpent* to follow him into the other world. The Europeans called her the *haughty* lady, on account of her majestic deportment and her proud air, and because she only frequented the company of the most distinguished Frenchmen. They regretted her much, because she had the knowledge of several simples with which she had saved the lives of many of our sick. This moving sight filled our people with grief and horror. The favorite wife of the deceased rose up and spoke to them with a smiling countenance: "I die without fear;" said she, "grief does not embitter my last hours. I recommend my children to you; whenever you see them, noble Frenchmen, remember that you have loved their father, and that he was till death a true and sincere friend of your nation, whom he loved more than himself. The disposer of life has been pleased to call him, and I shall soon go and join him; I shall tell him that I have seen your hearts moved at the sight of his corps; do not be grieved; we shall be longer friends in the *country of the spirits* than here, because we do not die there again.*

These words forced tears from the eyes of all the French; they were obliged to do all they could to prevent the Great Sun from killing himself, for he was inconsolable at the death of his brother, upon whom he was used to lay the weight of government, he being great chief of war of the Natches, *i. e.*, generalissimo of their armies; that prince grew furious by the resistance he met with; he held his gun by the barrel, and the Sun, his presumptive heir, held it by the lock, and caused the powder to fall out

*At the hour intended for the ceremony, they made the victims swallow little balls or pills of tobacco, in order to make them giddy, and as it were to take the sensation of pain from them; after that they were all strangled and put upon mats, the favorite on the right, the other wife on the left, and the others according to their rank.

of the pan; the hut was full of Suns, Nobles, and Honorables,* who were all trembling, but the French raised their spirits again, by hiding all the arms belonging to the sovereign, and filling the barrel of his gun with water, that it might be unfit for use for some time.

As soon as the Suns saw their sovereign's life in safety, they thanked the French, by squeezing their hands, but without speaking; a most profound silence reigned throughout, for grief and awe kept in bounds the multitude that were present.

The wife of the Great Sun was seized with fear during this transaction. She was asked whether she was ill, and she answered aloud, "Yes, I am"; and added with a lower voice, "If the Frenchmen go out of this hut, my husband dies and all the Natches will die with him; stay, then, brave Frenchmen, because your words are as powerful as arrows; besides, who could have ventured to do what you have done? But you are his true friends and those of his brother." Their laws obliged the Great Sun's wife to follow her husband in the grave; this was doubtless the cause of her fears; and likewise the gratitude towards the French, who interested themselves in behalf of his life, prompted her to speak in the above-mentioned manner.

The Great Sun gave his hand to the officers, and said to them: "My friends, my heart is so overpowered with grief that, though my eyes were open, I have not taken notice that you have been standing all this while, nor have I asked you to sit down; but pardon the excess of my affliction."

The Frenchmen told him that he had no need of excuses; that they were going to leave him alone, but that they would cease to be his friends unless he gave orders to light the fires again,† lighting his own before them; and that they should not leave him till his brother was buried.

He took all the Frenchmen by the hands, and said: "Since all the chiefs and noble officers will have me stay on earth, I will do it; I will not kill myself; let the fires be lighted again immediately, and I'll wait till death joins me to my brother; I am already old, and till I die I shall walk with the French; had it not been for them I should have gone with my brother, and all the roads would have been covered with dead bodies.

Improbable as this account may appear, it has nevertheless been credited by some of the wisest and most careful of ethnological writers, and its seeming appearance of romance disappears when the remembrance of similar ceremonies among Old World peoples comes to our minds.

An apparently well-authenticated case of attempted burial sacrifice is described by Miss A. J. Allen,‡ and refers to the Wascopums, of Oregon.

At length, by meaning looks and gestures rather than words, it was found that the chief had determined that the deceased boy's friend, who had been his companion in hunting the rabbit, snaring the pheasant, and fishing in the streams, was to be his companion to the spirit land; his son should not be deprived of his associate in the strange world to which he had gone; that associate should perish by the hand of his father, and be conveyed with him to the dead-house. This receptacle was built on a long, black rock in the center of the Columbia River, around which, being so near the falls, the current was amazingly rapid. It was thirty feet in length, and perhaps half that in breadth, completely enclosed and sodded except at one end, where was a

*The established distinctions among these Indians were as follows: The Suns, relatives of the Great Sun, held the highest rank; next came the Nobles; after them the Honorables; and last of all the common people, who were very much despised. As the nobility was propagated by the women, this contributed much to multiply it.

†The Great Sun had given orders to put out all the fires, which is only done at the death of the sovereign.

‡Ten Years in Oregon, 1850, p. 261.

narrow aperture just sufficient to carry a corpse through. The council overruled, and little George, instead of being slain, was conveyed living to the dead-house about sunset. The dead were piled on each side, leaving a narrow aisle between, and on one of these was placed the deceased boy; and, bound tightly till the purple, quivering flesh puffed above the strong bark cords, that he might die very soon, the living was placed by his side, his face to his till the very lips met, and extending along limb to limb and foot to foot, and nestled down into his couch of rottenness, to impede his breathing as far as possible and smother his cries.

Bancroft* states that—

The slaves sacrificed at the graves by the Aztecs and Tarascos were selected from various trades and professions, and took with them the most cherished articles of the master and the implements of their trade wherewith to supply his wants—

while among certain of the Central American tribe death was voluntary, wives, attendants, slaves, friends, and relations sacrificing themselves by means of a vegetable poison.

To the mind of a savage man unimpressed with the idea that self-murder is forbidden by law or custom, there can seem no reason why, if he so wills, he should not follow his beloved chief, master, or friend to the "happy other world;" and when this is remembered we need not feel astonished as we read of accounts in which scores of self-immolations are related. It is quite likely that among our own people similar customs might be followed did not the law and society frown down such proceedings. In fact the daily prints occasionally inform us, notwithstanding the restraints mentioned, that sacrifices do take place on the occasion of the death of a beloved one.

FEASTS.

In Beltrami† an account is given of the funeral ceremonies of one of the tribes of the west, including a description of the feast which took place before the body was consigned to its final resting-place:

I was a spectator of the funeral ceremony performed in honor of the manes of *Cloudy Weather's* son-in-law, whose body had remained with the Sioux, and was suspected to have furnished one of their repasts. What appeared not a little singular and indeed ludicrous in this funeral comedy was the contrast exhibited by the terrific lamentations and yells of one part of the company while the others were singing and dancing with all their might.

At another funeral ceremony for a member of the *Grand Medicine*, and at which as *a man of another world* I was permitted to attend, the same practice occurred. But at the feast which took place on that occasion an allowance was served up for the deceased out of every article of which it consisted, while others were beating, wounding, and torturing themselves, and letting their blood flow both over the dead man and his provisions, thinking possibly that this was the most palatable seasoning for the latter which they could possibly supply. His wife furnished out an entertainment present

* Nat. Races of Pacif. States, 1875, vol iii, p. 513.

† Pilgrimage, 1828, vol. ii, p. 443.

for him of all her hair and rags, with which, together with his arms, his provisions, his ornaments, and his mystic medicine bag, he was wrapped up in the skin which had been his last covering when alive. He was then tied round with the bark of some particular trees which they use for making cords, and bonds of a very firm texture and hold (the only ones indeed which they have), and instead of being buried in the earth was hung up to a large oak. The reason of this was that, as his favorite Manitou was the eagle, his spirit would be enabled more easily from such a situation to fly with him to Paradise.

Hind* mentions an account of a burial feast by De Brebeuf which occurred among the Hurons of New York:

The Jesuit missionary, P. de Brebeuf, who assisted at one of the "feasts of the dead" at the village of Ossosane, before the dispersion of the Hurons, relates that the ceremony took place in the presence of 2,000 Indians, who offered 1,200 presents at the common tomb, in testimony of their grief. The people belonging to five large villages deposited the bones of their dead in a gigantic shroud, composed of forty-eight robes, each robe being made of ten beaver skins. After being carefully wrapped in this shroud, they were placed between moss and bark. A wall of stones was built around this vast ossuary to preserve it from profanation. Before covering the bones with earth a few grains of Indian corn were thrown by the women upon the sacred relics. According to the superstitious belief of the Hurons the souls of the dead remain near the bodies until the "feast of the dead"; after which ceremony they become free, and can at once depart for the land of spirits, which they believe to be situated in the regions of the setting sun.

Ossuaries have not been used by savage nations alone, for the custom of exhuming the bones of the dead after a certain period, and collecting them in suitable receptacles, is well known to have been practised in Italy, Switzerland, and France. The writer saw in the church-yard of Zug, Switzerland, in 1857, a slatted pen containing the remains of hundreds of individuals. These had been dug up from the grave-yard and preserved in the manner indicated. The catacombs of Naples and Paris afford examples of burial ossuaries.

SUPERSTITION REGARDING BURIAL FEASTS.

The following account is by Dr. S. G. Wright, acting physician to the Leech Lake Agency, Minnesota:

Pagan Indians, or those who have not become Christians, still adhere to the ancient practice of feasting at the grave of departed friends; the object is to feast with the departed; that is, they believe that while they partake of the visible material the departed spirit partakes at the same time of the spirit that dwells in the food. From ancient time it was customary to bury with the dead various articles, such especially as were most valued in lifetime. The idea was that there was a spirit dwelling in the article represented by the material article; thus the war-club contained a spiritual war-club, the pipe a spiritual pipe, which could be used by the departed in another world. These several spiritual implements were supposed, of course, to accompany the soul, to be used also on the way to its final abode. This habit has now ceased.

* * * * * * *

* Canadian Red River Exploring Expedition, 1860, ii, p. 164.

FOOD.

This subject has been sufficiently mentioned elsewhere in connection with other matters and does not need to be now repeated. It has been an almost universal custom throughout the whole extent of the country to place food in or near the grave of deceased persons.

DANCES.

Gymnastic exercises, dignified with this name, upon the occasion of a death or funeral, were common to many tribes. It is thus described by Morgan:*

An occasional and very singular figure was called the "dance for the dead." It was known as the *O-hé-wá*. It was danced by the women alone. The music was entirely vocal, a select band of singers being stationed in the center of the room. To the songs for the dead which they sang the dancers joined in chorus. It was plaintive and mournful music. This dance was usually separate from all councils and the only dance of the occasion. It was commenced at dusk or soon after and continued until towards morning, when the shades of the dead who were believed to be present and participate in the dance were supposed to disappear. The dance was had whenever a family which had lost a member called for it, which was usually a year after the event. In the spring and fall it was often given for all the dead indiscriminately, who were believed then to revisit the earth and join in the dance.

The interesting account which now follows is by Stephen Powers,† and relates to the Yo-kai-a of California, containing other matters of importance pertaining to burial:

I paid a visit to their camp four miles below Ukiah, and finding there a unique kind of assembly-house, desired to enter and examine it, but was not allowed to do so until I had gained the confidence of the old sexton by a few friendly words and the tender of a silver half dollar. The pit of it was about 50 feet in diameter and 4 or 5 feet deep, and it was so heavily roofed with earth that the interior was damp and somber as a tomb. It looked like a low tumulus, and was provided with a tunnel-like entrance about 10 feet long and 4 feet high, and leading down to a level with the floor of the pit. The mouth of the tunnel was closed with brush, and the venerable sexton would not remove it until he had slowly and devoutly paced several times to and fro before the entrance.

Passing in I found the massive roof supported by a number of peeled poles painted white and ringed with black and ornamented with rude devices. The floor was covered thick and green with sprouting wheat, which had been scattered to feed the spirit of the captain of the tribe, lately deceased. Not long afterwards a deputation of the Senèl came up to condole with the Yo-kaí-a on the loss of their chief, and a dance or series of dances was held which lasted three days. During this time of course the Senèl were the guests of the Yo-kaí-a, and the latter were subjected to a

* League of the Iroquois, 1851, p. 287.

† Cont. to North American Ethnol., 1878, iii, p. 164.

considerable expense. I was prevented by other engagements from being present, and shall be obliged to depend on the description of an eye-witness, Mr. John Tenney, whose account is here given with a few changes:

There are four officials connected with the building, who are probably chosen to preserve order and to allow no intruders. They are the assistants of the chief. The invitation to attend was from one of them, and admission was given by the same. These four wore black vests trimmed with red flannel and shell ornaments. The chief made no special display on the occasion. In addition to these four, who were officers of the assembly-chamber, there were an old man and a young woman, who seemed to be priest and priestess. The young woman was dressed differently from any other, the rest dressing in plain calico dresses. Her dress was white covered with spots of red flannel, cut in neat figures, ornamented with shells. It looked gorgeous and denoted some office, the name of which I could not ascertain. Before the visitors were ready to enter, the older men of the tribe were reclining around the fire smoking and chatting. As the ceremonies were about to commence, the old man and young woman were summoned, and, standing at the end opposite the entrance, they inaugurated the exercises by a brief service, which seemed to be a dedication of the house to the exercises about to commence. Each of them spoke a few words, joined in a brief chant, and the house was thrown open for their visitors. They staid at their post until the visitors entered and were seated on one side of the room. After the visitors then others were seated, making about 200 in all, though there was plenty of room in the center for the dancing.

Before the dance commenced the chief of the visiting tribe made a brief speech, in which he no doubt referred to the death of the chief of the Yo-kaí-a, and offered the sympathy of his tribe in this loss. As he spoke, some of the women scarcely refrained from crying out, and with difficulty they suppressed their sobs. I presume that he proposed a few moments of mourning, for when he stopped the whole assemblage burst forth into a bitter wailing, some screaming as if in agony. The whole thing created such a din that I was compelled to stop my ears. The air was rent and pierced with their cries. This wailing and shedding of tears lasted about three or five minutes, though it seemed to last a half hour. At a given signal they ceased, wiped their eyes, and quieted down.

Then preparations were made for the dance. One end of the room was set aside for the dressing-room. The chief actors were five men, who were muscular and agile. They were profusely decorated with paint and feathers, while white and dark stripes covered their bodies. They were girt about the middle with cloth of bright colors, sometimes with variegated shawls. A feather mantle hung from the shoulder, reaching below the knee; strings of shells ornamented the neck, while their heads were covered with a crown of eagle feathers. They had whistles in their mouths as they danced, swaying their heads, bending and whirling their bodies; every muscle seemed to be exercised, and the feather ornaments quivered with light. They were agile and graceful as they bounded about in the sinuous course of the dance.

The five men were assisted by a semicircle of twenty women, who only marked time by stepping up and down with short step. They always took their places first and disappeared first, the men making their exit gracefully one by one. The dresses of the women were suitable for the occasion. They were white dresses, trimmed heavily with black velvet. The stripes were about three inches wide, some plain and others edged like saw teeth. This was an indication of their mourning for the dead chief, in whose honor they had prepared that style of dancing. Strings of haliotis and pachydesma shell beads encircled their necks, and around their waists were belts heavily loaded with the same material. Their head-dresses were more showy than those of the men. The head was encircled with a bandeau of otters' or beavers' fur, to which were attached short wires standing out in all directions, with glass or shell beads strung on them, and at the tips little feather flags and quail plumes. Surmounting all was a pyramidal plume of feathers, black, gray, and scarlet, the top generally

being a bright scarlet bunch, waving and tossing very beautifully. All these combined gave their heads a very brilliant and spangled appearance.

The first day the dance was slow and funereal, in honor of the Yo-kaí-a chief who died a short time before. The music was mournful and simple, being a monotonous chant in which only two tones were used, accompanied with a rattling of split sticks and stamping on a hollow slab. The second day the dance was more lively on the part of the men, the music was better, employing airs which had a greater range of tune, and the women generally joined in the chorus. The dress of the women was not so beautiful, as they appeared in ordinary calico. The third day, if observed in accordance with Indian custom, the dancing was still more lively and the proceedings more gay, just as the coming home from a Christian funeral is apt to be much more jolly than the going out.

A Yo-kaí-a widow's style of mourning is peculiar. In addition to the usual evidences of grief, she mingles the ashes of her dead husband with pitch, making a white tar or unguent, with which she smears a band about two inches wide all around the edge of the hair (which is previously cut off close to the head), so that at a little distance she appears to be wearing a white chaplet.

It is their custom to "feed the spirits of the dead" for the space of one year by going daily to places which they were accustomed to frequent while living, where they sprinkle pinole upon the ground. A Yo-kaí-a mother who has lost her babe goes every day for a year to some place where her little one played when alive, or to the spot where the body was burned, and milks her breasts into the air. This is accompanied by plaintive mourning and weeping and piteous calling upon her little one to return, and sometimes she sings a hoarse and melancholy chant, and dances with a wild estatic swaying of the body.

SONGS.

It has nearly always been customary to sing songs at not only funerals, but for varying periods of time afterwards, although these chants may no doubt occasionally have been simply wailing or mournful ejaculation. A writer * mentions it as follows:

At almost all funerals there is an irregular crying kind of singing, with no accompaniments, but generally all do not sing the same melody at the same time in unison. Several may sing the same song and at the same time, but each begins and finishes when he or she may wish. Often for weeks, or even months, after the decease of a dear friend, a living one, usually a woman, will sit by her house and sing or cry by the hour, and they also sing for a short time when they visit the grave or meet an esteemed friend whom they have not seen since the decease. At the funeral both men and women sing. No. 11 I have heard more frequently some time after the funeral, and No. 12 at the time of the funeral, by the Twanas. (For song see p. 251 of the magazine quoted.) The words are simply an exclamation of grief, as our word "alas," but they also have other words which they use, and sometimes they use merely the sylable *la*. Often the notes are sung in this order, and sometimes not, but in some order the notes *do* and *la*, and occasionally *mi*, are sung.

Some pages back will be found a reference, and the words of a peculiar death dirge sung by the Senèl of California, as related by Mr. Powers. It is as follows:

Hel-lel-li-ly,
Hel-lel-lo,
Hel-lel-lu.

*Am. Antiq., April, May, June, 1879, p. 251.

Fig 33. THE GHOST GAMBLE

Mr. John Campbell, of Montreal, Canada, has kindly called the attention of the writer to death songs very similar in character; for instance, the Basques of Spain ululate thus:

Lelo il Lelo, Lelo dead Lelo,
Lelo il Lelo,
Lelo zarat, Lelo zara,
Il Lelon killed Lelo.

This was called the "ululating Lelo." Mr. Campbell says:

This again connects with the Linus or Ailinus of the Greeks and Egyptians * * * which Wilkinson connects with the Coptic "ya lay-lee-ya lail." The Alleluia which Lescarbot heard the South Americans sing must have been the same wail. The Greek verb ὀλολύζω and the Latin ululare, with an English howl and wail, are probably derived from this ancient form of lamentation.

In our own time a writer on the manner and customs of the Creeks describes a peculiar alleluia or hallelujah he heard, from which he inferred that the American Indians must be the descendants of the lost tribes of Israel.

GAMES.

It is not proposed to describe under this heading examples of those athletic and gymnastic performances following the death of a person which have been described by Lafitau, but simply to call attention to a practice as a secondary or adjunct part of the funeral rites, which consists in gambling for the possession of the property of the defunct. Dr. Charles E. McChesney, U. S. A., who for some time was stationed among the Wahpeton and Sisseton Sioux, furnishes a detailed and interesting account of what is called the "ghost gamble." This is played with marked wild-plum stones. So far as ascertained it is peculiar to the Sioux. Figure 33 appears as a fair illustration of the manner in which this game is played.

After the death of a wealthy Indian the near relatives take charge of the effects, and at a stated time—usually at the time of the first feast held over the bundle containing the lock of hair—they are divided into many small piles, so as to give all the Indians invited to play an opportunity to win something. One Indian is selected to represent the ghost, and he plays against all the others, who are not required to stake anything on the result, but simply invited to take part in the ceremony, which is usually held in the lodge of the dead person, in which is contained the bundle inclosing the lock of hair. In cases where the ghost himself is not wealthy the stakes are furnished by his rich friends, should he have any. The players are called in one at a time, and play singly against the ghost's representative, the gambling being done in recent years by means of cards. If the invited player succeeds in beating the ghost, he takes one of the piles of goods and passes out, when another is invited to play, &c., until all the piles of goods are won. In cases of men only the men play, and in cases of women the women only take part in the ceremony.

Before white men came among these Indians and taught them many of his improved vices, this game was played by means of figured plum-seeds, the men using eight and the women seven seeds, figured as follows, and shown in Figure 34.

Two seeds are simply blackened on one side, the reverse containing nothing. Two seeds are black on one side, with a small spot of the color of the seed left in the center, the reverse side having a black spot in the center, the body being plain. Two seeds have a buffalo's head on one side and the reverse simply two crossed black lines. There is but one seed of this kind in the set used by the women. Two seeds have half of one side blackened and the rest left plain, so as to represent a half moon; the reverse has a black longitudinal line crossed at right angles by six small ones. There are six throws whereby the player can win, and five that entitle him to another throw. The winning throws are as follows, each winner taking a pile of the ghost's goods:

Two plain ones up, two plain with black spots up, buffalo's head up, and two half moons up wins a pile. Two plain black ones up, two black with natural spot up two longitudinally crossed ones up, and the transversely crossed one up wins a pile. Two plain black ones up, two black with natural spots up, two half moons up, and the transversely crossed one up wins a pile. Two plain black ones, two black with natural spot up, two half moons up, and the buffalo's head up wins a pile. Two plain ones up, two with black spots up, two longitudinally crossed ones up, and the transversely crossed one up wins a pile. Two plain ones up, two with black spots up,

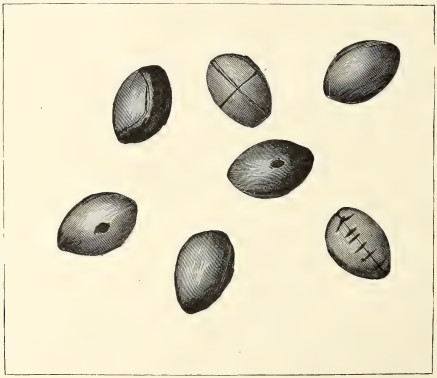


FIG. 45.—Auxiliary throw No. 5.

buffalo's head up, and two long crossed up wins a pile. The following auxiliary throws entitle to another chance to win: two plain ones up, two with black spots up, one half moon up, one longitudinally crossed one up, and buffalo's head up gives another throw, and on this throw, if the two plain ones up and two with black spots with either of the half moons or buffalo's head up, the player takes a pile. Two plain ones up, two with black spots up, two half moons up, and the transversely crossed

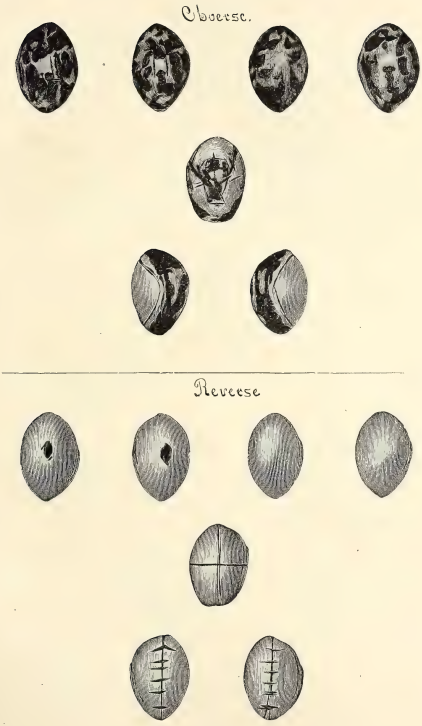


FIG. 34.—Figured Plum Stones.

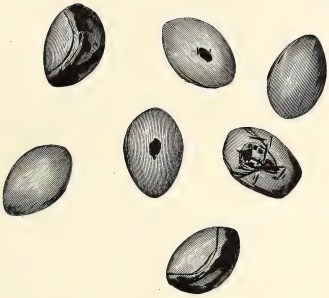


Fig. 35.—Winning Throw No. 1.

Fig. 36.—Winning Throw No. 2.

Fig. 37.—Winning Throw No. 3.

Fig. 38.—Winning Throw No. 4.

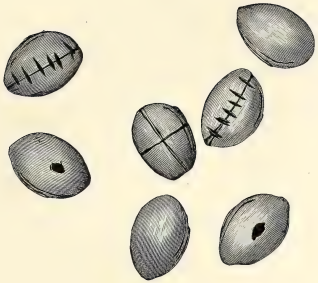


Fig. 39.—Winning Throw No. 5.

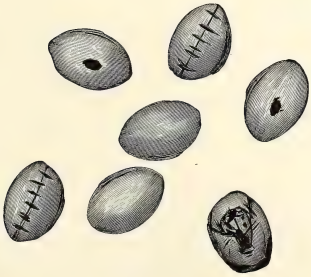


Fig. 40.—Winning Throw No. 6.

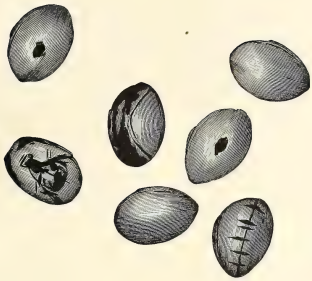


FIG. 41.—Auxiliary Throw No. 1.

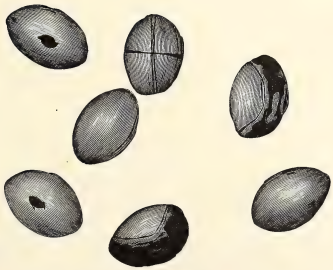


FIG. 42.—Auxiliary Throw No. 2.

Fig. 43.—Auxiliary Throw No. 3.

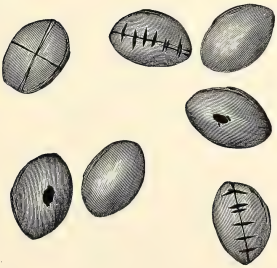


Fig. 44.—Auxiliary Throw No. 4.

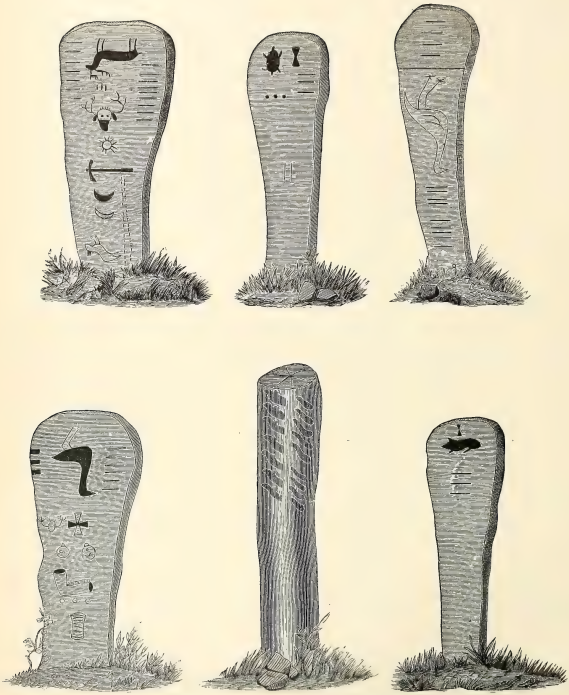


FIG. 46.—Grave Posts.

one up entitles to another throw, when, if all of the black sides come up, excepting one, the throw wins. One of the plain ones up and all the rest with black sides up gives another throw, and the same then turning up wins. One of the plain black ones up with that side up of all the others having the least black on gives another throw, when the same turning up again wins. One half moon up, with that side up of all the others having the least black on gives another throw, and if the throw is then duplicated it wins. The eighth seed, used by the men, has its place in their game whenever its facings are mentioned above. I transmit with this paper a set of these figured seeds, which can be used to illustrate the game if desired. These seeds ars said to be nearly a hundred years old, and sets of them are now very rare.

For assisting in obtaining this account Dr. McChesney acknowledges his indebtedness to Dr. C. C. Miller, physician to the Sisseton Indian Agency.

Figures 35 to 45 represent the appearance of the plum stones and the different throws; these have been carefully drawn from the set of stones sent by Dr. McChesney.

POSTS.

These are placed at the head or foot of the grave, or at both ends, and have painted or carved on them a history of the deceased or his family, certain totemic characters, or, according to Schoolcraft, not the achievements of the dead, but of those warriors who assisted and danced at the interment. The northwest tribes and others frequently plant poles near the graves, suspending therefrom bits of rag, flags, horses' tails, &c. The custom among the present Indians does not exist to any extent. Beltrami* speaks of it as follows:

Here I saw a most singular union. One of these graves was surmounted by a cross, whilst upon another close to it a trunk of a tree was raised, covered with hieroglyphics recording the number of enemies slain by the tenant of the tomb and several of his tutelary Manitous.

The following extract from Schoolcraft† relates to the burial posts used by the Sioux and Chippewas. Figure 46 is after the picture given by this author in connection with the account quoted:

Among the Sioux and Western Chippewas, after the body had been wrapped in its best clothes and ornaments, it is then placed on a scaffold or in a tree until the flesh is entirely decayed, after which the bones are buried and grave-posts fixed. At the head of the grave a tabular piece of cedar or other wood, called the *adjedatig*, is set. This grave-board contains the symbolic or representative figure, which records, if it be a warrior, his totem, that is to say the symbol of his family, or surname, and such arithmetical or other devices as seem to denote how many times the deceased has been in war parties, and how many scalps he has taken from the enemy—two facts from which his reputation is essentially to be derived. It is seldom that more is attempted in the way of inscription. Often, however, distinguished chiefs have their war flag,

*Pilgrimage, 1828, ii, p. 308.

†Hist. Indian Tribes of the United States, 1851, part i, p. 356.

or, in modern days, a small ensign of American fabric, displayed on a standard at the head of their graves, which is left to fly over the deceased till it is wasted by the elements. Scalps of their enemies, feathers of the bald or black eagle, the swallow-tailed falcon, or some carnivorous bird, are also placed, in such instances, on the *adjedatig*, or suspended, with offerings of various kinds, on a separate staff. But the latter are superadditions of a religious character, and belong to the class of the Ke-ke-wa-o-win-an-tig (*ante*, No. 4). The building of a funeral fire on recent graves is also a rite which belongs to the consideration of their religious faith.

FIRES.

It is extremely difficult to determine why the custom of building fires on or near graves was originated, some authors stating that the soul thereby underwent a certain process of purification, others that demons were driven away by them, and again that they were to afford light to the wandering soul setting out for the spirit land. One writer states that—

The Algonkins believed that the fire lighted nightly on the grave was to light the spirit on its journey. By a coincidence to be explained by the universal sacredness of the number, both Algonkins and Mexicans maintained it for *four* nights consecutively. The former related the tradition that one of their ancestors returned from the spirit land and informed their nation that the journey thither consumed just four days, and that collecting fuel every night added much to the toil and fatigue the soul encountered, all of which could be spared it.

So it would appear that the belief existed that the fire was also intended to assist the spirit in preparing its repast.

Stephen Powers* gives a tradition current among the Yurok of California as to the use of fires:

After death they keep a fire burning certain nights in the vicinity of the grave. They hold and believe, at least the "Big Indians" do, that the spirits of the departed are compelled to cross an extremely attenuated greasy pole, which bridges over the chasm of the debatable land, and that they require the fire to light them on their darksome journey. A righteous soul traverses the pole quicker than a wicked one, hence they regulate the number of nights for burning a light according to the character for goodness or the opposite which the deceased possessed in this world.

Dr. Emil Bessels, of the Polaris expedition, informs the writer that a somewhat similar belief obtains among the Esquimaux.

Figure 47 is a fair illustration of a grave-fire; it also shows one of the grave-posts mentioned in a previous section.

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*Cont. to N. A. Ethnol., 1877, vol. ii., p. 58.

Fig 47 GRAVE FIRE

SUPERSTITIONS.

An entire volume might well be written which should embrace only an account of the superstitions regarding death and burial among the Indians, so thoroughly has the matter been examined and discussed by various authors, and yet so much still remains to be commented on, but in this work, which is mainly tentative, and is hoped will be provocative of future efforts, it is deemed sufficient to give only a few accounts. The first is by Dr. W. Mathews, United States Army,* and relates to the Hidatsa:

When a Hidatsa dies, his shade lingers four nights around the camp or village in which he died, and then goes to the lodge of his departed kindred in the "village of the dead." When he has arrived there he is rewarded for his valor, self-denial, and ambition on earth by receiving the same regard in the one place as in the other, for there as here the brave man is honored and the coward despised. Some say that the ghosts of those that commit suicide occupy a separate part of the village, but that their condition differs in no wise from that of the others. In the next world human shades hunt and live in the shades of buffalo and other animals that have here died. There, too, there are four seasons, but they come in an inverse order to the terrestrial seasons. During the four nights that the ghost is supposed to linger near his former dwelling, those who disliked or feared the deceased, and do not wish a visit from the shade, scorch with red coals a pair of moccasins which they leave at the door of the lodge. The smell of the burning leather they claim keeps the ghost out; but the true friends of the dead man take no such precautions.

From this account it will be seen that the Hidatsa as well as the Algonkins and Mexicans believed that four days were required before the spirit could finally leave the earth. Why the smell of burning leather should be offensive to spirits it would perhaps be fruitless to speculate on.

The next account, by Keating,† relating to the Chippewas, shows a slight analogy regarding the slippery-pole tradition already alluded to:

The Chippewas believe that there is in man an essence entirely distinct from the body; they call it *Ochechag*, and appear to supply to it the qualities which we refer to the soul. They believe that it quits the body at the time of death, and repairs to what they term *Chekechekchekawe;* this region is supposed to be situated to the south, and on the shores of the great ocean. Previous to arriving there they meet with a stream which they are obliged to cross upon a large snake that answers the purpose of a bridge; those who die from drowning never succeed in crossing the stream; they are thrown into it and remain there forever. Some souls come to the edge of the stream, but are prevented from passing by the snake, which threatens to devour them; these are the souls of the persons in a lethargy or trance. Being refused a passage these souls return to their bodies and reanimate them. They believe that animals have souls, and even that inorganic substances, such as kettles, &c., have in them a similar essence.

*Ethnol. and Philol. of the Hidatsa Indians. U. S. Geol. Surv. of Terr., 1877, p. 409.
†Long's Exped., 1824, vol. ii, p. 158.

In this land of souls all are treated according to their merits. Those who have been good men are free from pain; they have no duties to perform, their time is spent in dancing and singing, and they feed upon mushrooms, which are very abundant. The souls of bad men are haunted by the phantom of the persons or things that they have injured; thus, if a man has destroyed much property the phantoms of the wrecks of this property obstruct his passage wherever he goes; if he has been cruel to his dogs or horses they also torment him after death. The ghosts of those whom during his lifetime he wronged are there permitted to avenge their injuries. They think that when a soul has crossed the stream it cannot return to its body, yet they believe in apparitions, and entertain the opinion that the spirits of the departed will frequently revisit the abodes of their friends in order to invite them to the other world, and to forewarn them of their approaching dissolution.

Stephen Powers, in his valuable work so often quoted, gives a number of examples of superstitions regarding the dead, of which the following relates to the Karok of California:

How well and truly the Karok reverence the memory of the dead is shown by the fact that the highest crime one can commit is the *pet-chi-é-ri*, the mere mention of the dead relative's name. It is a deadly insult to the survivors, and can be atoned for only by the same amount of blood-money paid for willful murder. In default of that they will have the villain's blood. * * * At the mention of his name the mouldering skeleton turns in his grave and groans. They do not like stragglers even to inspect the burial place. * * * They believe that the soul of a good Karok goes to the "happy western land" beyond the great ocean. That they have a well-grounded assurance of an immortality beyond the grave is proven, if not otherwise, by their beautiful and poetical custom of whispering a message in the ear of the dead. * * * Believe that dancing will liberate some relative's soul from bonds of death, and restore him to earth.

According to the same author, when a Kelta dies a little bird flies away with his soul to the spirit land. If he was a bad Indian a hawk will catch the little bird and eat him up, soul and feathers, but if he was good he will reach the spirit land. Mr. Powers also states that—

The Tolowa share in the superstitious observance for the memory of the dead which is common to the Northern Californian tribes. When I asked the chief Tahhokolli to tell me the Indian words for "father" and "mother" and certain others similar, he shook his head mournfully and said, "All dead," "All dead," "No good." They are forbidden to mention the name of the dead, as it is a deadly insult to the relatives, * * * and that the Mat-tóal hold that the good depart to a happy region somewhere southward in the great ocean, but the soul of a bad Indian transmigrates into a grizzly bear, which they consider, of all animals, the cousin-german of sin.

The same author who has been so freely quoted states as follows regarding some of the superstitions and beliefs of the Modocs:

* * * It has always been one of the most passionate desires among the Modok, as well as their neighbors, the Shastika, to live, die, and be buried where they were born. Some of their usages in regard to the dead and their burial may be gathered from an incident that occurred while the captives of 1873 were on their way from the Lava Beds to Fort Klamath, as it was described by an eye-witness. Curly-headed Jack, a prominent warrior, committed suicide with a pistol. His mother and female friends gathered about him and set up a dismal wailing; they besmeared themselves with his blood and endeavored by other Indian customs to restore his life. The mother took his head in her lap and scooped the blood from his ear, another old woman placed her hand upon his heart, and a third blew in his face. The sight of the group—these poor old women, whose grief was unfeigned, and the dying man—was terrible in its sad-

ness. Outside the tent stood Bogus Charley, Huka Jim, Shacknasty Jim, Steamboat Frank, Curly-headed Doctor, and others who had been the dying man's companions from childhood, all affected to tears. When he was lowered into the grave, before the soldiers began to cover the body, Huka Jim was seen running eagerly about the camp trying to exchange a two-dollar bill of currency for silver. He owed the dead warrior that amount of money, and he had grave doubts whether the currency would be of any use to him in the other world—sad commentary on our national currency!—and desired to have the coin instead. Procuring it from one of the soldiers he cast it in and seemed greatly relieved. All the dead man's other effects, consisting of clothing, trinkets, and a half dollar, were interred with him, together with some root-flour as victual for the journey to the spirit land.

The superstitious fear Indians have of the dead or spirit of the dead may be observed from the following narrative by Swan.* It regards the natives of Washington Territory:

My opinion about the cause of these deserted villages is this: It is the universal custom with these Indians never to live in a lodge where a person has died. If a person of importance dies, the lodge is usually burned down, or taken down and removed to some other part of the bay; and it can be readily seen that in the case of the Palux Indians, who had been attacked by the Chehalis people, as before stated, their relatives chose at once to leave for some other place. This objection to living in a lodge where a person has died is the reason why their sick slaves are invariably carried out into the woods, where they remain either to recover or die. There is, however, no disputing the fact that an immense mortality has occurred among these people, and they are now reduced to a mere handful.

The great superstitious dread these Indians have for a dead person, and their horror of touching a corpse, oftentimes give rise to a difficulty as to who shall perform the funeral ceremonies; for any person who handles a dead body must not eat of salmon or sturgeon for thirty days. Sometimes, in cases of small-pox, I have known them leave the corpse in the lodge, and all remove elsewhere; and in two instances that came to my knowledge, the whites had to burn the lodges, with the bodies in them, to prevent infection.

So, in the instances I have before mentioned, where we had buried Indians, not one of their friends or relatives could be seen. All kept in their lodges, singing and drumming to keep away the spirits of the dead.

According to Bancroft†—

The Tlascaltecs supposed that the common people were after death transformed into beetles and disgusting objects, while the nobler became stars and beautiful birds.

The Mosquito Indians of Central America studiously and superstitiously avoid mentioning the name of the dead, in this regard resembling those of our own country.

Enough of illustrative examples have now been given, it is thought, to enable observers to thoroughly comprehend the scope of the proposed final volume on the mortuary customs of North American Indians, and while much more might have been added from the stored-up material on hand, it has not been deemed advisable at this time to yield to a desire for amplification. The reader will notice, as in the previous paper, that discussion has been avoided as foreign to the present purpose of the volume, which is intended, as has been already stated, simply to induce further investigation and contribution from careful and conscientious

* Northwest Coast, 1857, p. 212.

† Nat. Races Pacif. States, 1875, vol. iii, p. 512.

observers. From a perusal of the excerpts from books and correspondence given will be seen what facts are useful and needed; in short, most of them may serve as copies for preparation of similar material.

To assist observers, the queries published in the former volume are also given.

1st. NAME OF THE TRIBE; present appellation; former, if differing any; and that used by the Indians themselves.

2d. LOCALITY, PRESENT AND FORMER.—The response should give the range of the tribe and be full and geographically accurate.

3d. DEATHS AND FUNERAL CEREMONIES; what are the important and characteristic facts connected with these subjects? How is the corpse prepared after death and disposed of? How long is it retained? Is it spoken to after death as if alive? when and where? What is the character of the addresses? What articles are deposited with it; and why? Is food put in the grave, or in or near it afterwards? Is this said to be an ancient custom? Are persons of the same gens buried together; and is the clan distinction obsolete, or did it ever prevail?

4th. MANNER OF BURIAL, ANCIENT AND MODERN; STRUCTURE AND POSITION OF THE GRAVES; CREMATION.—Are burials usually made in high and dry grounds? Have mounds or tumuli been erected in modern times over the dead? How is the grave prepared and finished? What position are bodies placed in? Give reasons therefor if possible. If cremation is or was practiced, describe the process, disposal of the ashes, and origin of custom or traditions relating thereto. Are the dead ever eaten by the survivors? Are bodies deposited in springs or in any body of water? Are scaffolds or trees used as burial places; if so, describe construction of the former and how the corpse is prepared, and whether placed in skins or boxes. Are bodies placed in canoes? State whether they are suspended from trees, put on scaffolds or posts, allowed to float on the water or sunk beneath it, or buried in the ground. Can any reasons be given for the prevalence of any one or all of the methods? Are burial posts or slabs used, plain, or marked, with flags or other insignia of position of deceased. Describe embalmment, mummification, desiccation, or if antiseptic precautions are taken, and subsequent disposal of remains. Are bones collected and reinterred; describe ceremonies, if any, whether modern or ancient. If charnel houses exist or have been used, describe them.

5th. MOURNING OBSERVANCES.—Is scarification practiced, or personal mutilation? What is the garb or sign of mourning? How are the dead lamented? Are periodical visits made to the grave? Do widows carry symbols of their deceased children or husbands, and for how long? Are sacrifices, human or otherwise, voluntary or involuntary, offered? Are fires kindled on graves; why, and at what time, and for how long?

6th. BURIAL TRADITIONS AND SUPERSTITIONS.—Give in full all that

can be learned on these subjects, as they are full of interest and very important.

In short, every fact bearing on the disposal of the dead; and correlative customs are needed, and details should be as succinct and full as possible.

One of the most important matters upon which information is needed is the "why" and "wherefore" for every rite and custom; for, as a rule, observers are content to simply state a certain occurrence as a fact, but take very little trouble to inquire the reason for it.

Any material the result of careful observation will be most gratefully received and acknowledged in the final volume; but the writer must here confess the lasting obligation he is under to those who have already contributed, a number so large that limited space precludes a mention of their individual names.

Criticism and comments are earnestly invited from all those interested in the special subject of this paper and anthropology in general. Contributions are also requested from persons acquainted with curious forms of burial prevailing among other tribes of savage men.

The lithographs which illustrate this paper have been made by Thos. Sinclair & Son, of Philadelphia, Pa., after original drawings made by Mr. W. H. Holmes, who has with great kindness superintended their preparation.

SMITHSONIAN INSTITUTION——BUREAU OF ETHNOLOGY.
J. W. POWELL, DIRECTOR.

STUDIES

IN

CENTRAL AMERICAN PICTURE-WRITING.

BY

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STUDIES IN CENTRAL AMERICAN PICTURE-WRITING.

By Edward S. Holden.

I.

Since 1876 I have been familiar with the works of Mr. John L. Stephens on the antiquities of Yucatan, and from time to time I have read works on kindred subjects with ever increasing interest and curiosity in regard to the meaning of the hieroglyphic inscriptions on the stones and tablets of Copan, Palenque, and other ruins of Central America. In August, 1880, I determined to see how far the principles which are successful when applied to ordinary cipher-writing would carry one in the inscriptions of Yucatan. The difference between an ordinary cipher-message and these inscriptions is not so marked as might at first sight appear. The underlying principles of deciphering are quite the same in the two cases.

The chief difficulty in the Yucatec inscriptions is our lack of any definite knowledge of the nature of the records of the aborigines. The patient researches of our archæologists have recovered but very little of their manners and habits, and one has constantly to avoid the tempting suggestions of an imagination which has been formed by modern influences, and to endeavor to keep free from every suggestion not inherent in the stones themselves. I say the stones, for I have only used the Maya manuscripts incidentally. They do not possess, to me, the same interest, and I think it may certainly be said that all of them are younger than the Palenque tablets, and far younger than the inscriptions at Copan.

I therefore determined to apply the ordinary principles of deciphering, without any bias, to the Yucatec inscriptions, and to go as far as I could *certainly*. Arrived at the point where demonstration ceased, it would be my duty to stop. For, while even the conjectures of a mind perfectly trained in archæologic research are valuable and may subsequently prove to be quite right, my lack of familiarity with historical works forced me to keep within narrow and safe limits.

My programme at beginning was, *first*, to see if the inscriptions at Copan and Palenque were written in the same tongue. When I say "to see," I mean to definitely prove the fact, and so in other cases; *second*, to see how the tablets were to be read. That is, in horizontal lines, are

they to be read from right to left, or the reverse? In vertical columns, are they to be read up or down? *Third*, to see whether they were phonetic characters, or merely ideographic, or a mixture of the two—rebus-like, in fact.

If the characters turned out to be purely phonetic, I had determined to stop at this point, since I had not the time to learn the Maya language, and again because I utterly and totally distrusted the methods which, up to this time, have been applied by BRASSEUR DE BOURBOURG and others who start, and must start, from the misleading and unlucky alphabet handed down by LANDA. I believe that legacy to have been a positive misfortune, and I believe any process of the kind attempted by BRASSEUR DE BOURBOURG (for example, in his essay on the *MS. Troano*) to be extremely dangerous and difficult in application, and to require a degree of scientific caution almost unique.

Dr. HARRISON ALLEN, in his paper, "The Life Form in Art," in the *Transactions of the American Philosophical Society*, is the only investigator who has applied this method to Central American remains with success, so it seems to me; and even here errors have occurred.

The process I allude to is something like the following: A set of characters, say the alphabet of LANDA, is taken as a starting point. The *variants* of these are formed. Then the basis of the investigation is ready. From this, the interpretation follows by identifications of each new character with one of the standard set or with one of its *variants*. Theoretically, there is no objection to this procedure. Practically, also, there is no objection if the work is done strictly in the order named. In fact, however, the list of *variants* is filled out not before the work is begun, but during its progress, and in such a way as to satisfy the necessities of the interpreter in carrying out some preconceived idea. With a sufficient latitude in the choice of *variants* any MS. can receive any interpretation. For example, the *MS. Troano*, which a casual examination leads me to think is a *ritual*, and an account of the adventures of several Maya gods, is interpreted by BRASSEUR DE BOURBOURG as a record of mighty geologic changes. It is next to impossible to avoid errors of this nature at least, and in fact they have not been avoided, so far as I know, except by Dr. ALLEN in the paper cited.

I, personally, have chosen the stones and not the manuscripts for study largely because *variants* do not exist in the same liberal degree in the stone inscriptions as they have been supposed to exist in the manuscripts.

At any one ruin the characters for the same idea are alike, and alike to a marvelous degree. At another ruin the type is just a little different, but the fidelity to this type is equally great. Synonyms exist; that is, the same idea may be given by two or more utterly different signs. But a given sign is made in a fixed and definite way. Finally the MSS. are, I think, later than the stones. Hence the root of the matter is the interpretation of the stones, or not so much their full interpretation as the discovery of a *method of interpretation*, which shall be sure.

Suppose, for example, that we know the meaning of a dozen characters only, and the way a half dozen of these are joined together in a sentence. The *method* by which these were obtained will serve to add others to the list, and progress depends in such a case only on our knowledge of the people who wrote, and of the subjects upon which they were writing. Such knowledge and erudition belongs to the archæologists by profession. A step that might take me a year to accomplish might be made in an instant by one to whom the Maya and Aztec mythology was familiar, if he were proceeding according to a sound method. At the present time we know nothing of the meaning of any of the Maya hieroglyphs.

It will, therefore, be my object to go as far in the subject as I can proceed with certainty, every step being demonstrated so that not only the archæologist but any intelligent person can follow. As soon as the border-land is reached in which proof disappears and opinion is the only guide, the search must be abandoned except by those whose cultivated and scientific opinions are based on knowledge far more profound and various than I can pretend or hope to have.

If I do not here push my own conclusions to their farthest limit, it must not be assumed that I do not see, at least in some cases, the direction in which they lead. Rather, let this reticence be ascribed to a desire to lay the foundations of a new structure firmly, to prescribe the method of building which my experience has shown to be adequate and necessary, and to leave to those abler than myself the erection of the superstructure. If my methods and conclusions are correct (and I have no doubts on this point, since each one has been reached in various ways and tested by a multiplicity of criteria) there is a great future to these researches. It is not to be forgotten that here we have no Rosetta stone to act at once as key and criterion, and that instead of the accurate descriptions of the Egyptian hieroglyphics which were handed down by the Greek cotemporaries of the sculptors of these inscriptions, we have only the crude and brutal chronicles of an ignorant Spanish soldiery, or the bigoted accounts of an unenlightened priesthood. To CORTEZ and his companions a memorandum that it took one hundred men all day to throw the idols into the sea was all-sufficient. To the Spanish priests the burning of all manuscripts was praiseworthy, since those differing from Holy Writ were noxious and those agreeing with it superfluous. It is only to the patient labor of the Maya sculptor who daily carved the symbols of his belief and creed upon enduring stone, and to the luxuriant growths of semi-tropical forests which concealed even these from the passing Spanish adventurer, that we owe the preservation of the memorials of past beliefs and vanished histories.

Not the least of the pleasures of such researches as these comes from the recollection that they vindicate the patience and skill of forgotten men, and make their efforts not quite useless. It was no rude savage that carved the Palenque cross; and if we can discover what his efforts

meant, his labor and his learning have not been all in vain. It will be one more proof that human effort, even misdirected, is not lost, but that it comes, later or earlier, "to forward the general deed of man."

II.

MATERIALS FOR THE PRESENT INVESTIGATION.

My examination of the works of Mr. J. L. STEPHENS has convinced me that in every respect his is the most trustworthy work on the *hieroglyphs* of Central America. The intrinsic evidence to this effect is very strong, but when I first became familiar with the works of WALDECK I found so many points of difference that my faith was for a time shaken, and I came to the conclusion that while the existing representations might suffice for the study of the general forms of statues, tablets, and buildings, yet they were not sufficiently accurate in detail to serve as a basis for the deciphering I had in mind. I am happy to bear witness, however, that STEPHENS'S work is undoubtedly amply adequate to the purpose, and this fact I have laboriously verified by a comparison of it with various representations, as those of DESAIX and others, and also with a few photographs. The drawings of WALDECK are very beautiful and artistic, but either the artist himself or his lithographers have taken singular liberties in the published designs. STEPHENS'S work is not only accurate, but it contains sufficient material for my purpose (over 1,500 separate hieroglyphs), and, therefore, I have based my study exclusively upon his earliest work, "*Incidents of Travel in Central America, Chiapas, and Yucatan*," 2 vols., 8vo. New York, 1842 (twelfth edition). I have incidentally consulted the works on the subject contained in the Library of Congress, particularly those of BRASSEUR DE BOURBOURG, KINGSBOROUGH, WALDECK, and others, but, as I have said, the two volumes above named contain all the the material I have been able to utilize, and much more which is still under examination.

One fact which makes the examination of the Central American antiquities easier than it otherwise would be, has not, I think, been sufficiently dwelt upon by former writers. This is the remarkable faithfulness of the artists and sculptors of these statues and inscriptions to a standard. Thus, at Copan, wherever the same kind of hieroglyph is to be represented, it will be found that the human face or other object employed is almost identically the same in expression and character, wherever it is found. The same characters at different parts of a tablet do not differ more than the same letters of the alphabet in two fonts of type.

At Palenque the *type* (font) changes, but the adherence to this is equally or almost equally rigid. It is to be presumed that in this latter

case, where work was done both in stone and stucco, the nature of the material affected the portraiture more or less.

The stone statues at Copan, for example, could not all have been done by the same artist, nor at the same time. I have elsewhere shown that two of these statues are absolutely identical. How was this accomplished? Was one stone taken to the foot of the other and cut by it as a pattern? This is unlikely, especially as in the case mentioned the *scale* of the two statues is quite different. I think it far more likely that each was cut from a drawing, or series of drawings, which must have been preserved by priestly authority. The work at any one place must have required many years, and could not have been done by a single man; nor is it probable that it was all done in one generation. Separate hieroglyphs must have been preserved in the same way. It is this rigid adherence to a type, and the banishment of artistic fancy, which will allow of progress in the deciphering of the inscriptions or the comparison of the statues. Line after line, ornament after ornament, is repeated with utter fidelity. The reason of this is not far to seek. This, however, is not the place to explain it, but rather to take advantage of the fact itself. We may fairly say that were it not so, and with our present data, all advances would be tenfold more difficult.

III.

SYSTEM OF NOMENCLATURE.

It is impossible without a special and expensive font of type to refer pictorially to each character, and therefore some system of nomenclature must be adopted. The one I employ I could now slightly improve, but it has been used and results have been obtained by it. It is sufficient for the purpose, and I will, therefore, retain it rather than to run the risk of errors by changing it to a more perfect system. I have numbered the plates in STEPHENS's *Central America* according to the following scheme:

ENGRAVINGS OF VOLUME I.

	Page.
Stone Statue, front view, I have called Plate I	*Frontispiece.*
Wall of Copan, Plate II	96
Plan of Copan, Plate III	133
Death's Head, Plate III[a]	135
Portrait, Plate III[b]	136
Stone Idol, Plate IV	138
Portrait, Plate IV[a]	139
Stone Idol, Plate V	140
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No. 1, Sides of Altar, Plate VI	142
No. 2, Sides of Altar, Plate VII	142
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No. 1, Stone Idol, front view, Plate IX 149
No. 2, Stone Idol, back view, Plate X 150
Idol half buried, Plate XI 151
No. 1, Idol, Plate XII 152
No. 2, Idol, Plate XIII 152
No. 1, Idol, Plate XIV 153
No. 2, Idol, Plate XV 153
Idol and Altar, Plate XVI 154
Fallen Idol, Plate XVII 155
No. 1, Idol, front view, Plate XVIII 156
No. 2, Idol, back view, Plate XIX 156
No. 3, Idol, side view, Plate XX 156
Fallen Idol, Plate XX[a] 157
Circular Altar, Plate XX[b] 157
No. 1, Stone Idol, front view, Plate XXI 158
No. 2, Stone Idol, back view, Plate XXII 158
No. 3, Stone Idol, side view, Plate XXIII 158
Great Square of Antigua Guatimala, Plate XXIII[a] 266
Profile of Nicaragua Canal, Plate XXIII[b] 412

ENGRAVINGS OF VOLUME II.

Page.
Stone Tablet, Plate XXIV ..... *Frontispiece.*
Idol at Quirigua, Plate XXV 121
Idol at Quirigua, Plate XXVI 122
Santa Cruz del Quiché, Plate XXVII 171
Place of Sacrifice, Plate XXVIII 184
Figures found at Santa Cruz del Quiché, Plate XXIX 185
Plaza of Quezaltenango, Plate XXX 204
Vases found at Gueguetenango, Plate XXXI 231
Ocosingo, Plate XXXII 259
Palace at Palenque, Plate XXXIII 309
Plan of Palace, Plate XXXIV 310
Stucco Figure on Pier, Plate XXXV 311
Front Corridor of Palace, Plate XXXVI 313
No. 1, Court-yard of Palace, Plate XXXVII 314
No. 2, Colossal Bas-reliefs in Stone, Plate XXXIX 314
East side of Court-yard, Plate XXXVII 314
No. 1, Bas-relief in Stucco, Plate XL 316
No. 2, Bas-relief in Stucco, Plate XLI 316
No. 3, Bas-relief in Stucco, Plate XLII 316
Oval Bas-relief in Stone, Plate XLIII 318
Bas-relief in Stucco, Plate XLIV 319
General Plan of Palenque, Plate XLV 337
Casa No. 1 in Ruins, Plate XLVI 338
Casa No. 1 restored, Plate XLVII 339
No. 1, Bas-relief in Stucco, Plate XLVIII 340
No. 2, Bas-relief in Stucco, Plate XLIX 340
No. 3, Bas-relief in Stucco, Plate L 340
No. 4, Bas-relief in Stucco, Plate LI 340
No. 1, Tablet of Hieroglyphics, Plate LII 342
No. 2, Tablet of Hieroglyphics, Plate LIII 342
Tablet on inner Wall, Plate LIV 343
Casa di Piedras, No. 2, Plate LV 344
Tablet on back Wall of Altar, Casa No. 2, Plate LVI 345
Stone Statue, Plate LVII 349

Page.
Casa No. 3, Plate LVIII 350
Front Corridor, Plate LIX 351
No. 1, Bas-reliefs in Front of Altar, Plate LX 353
No. 2, Bas-reliefs in Front of Altar, Plate LXI 353
Adoratorio or Altar, Plate LXII 354
Casa No. 4, Plate LXIII 355
House of the Dwarf, Plate LXIV 420
Casa del Gobernador, Plate LXV 428
Sculptured Front of Casa del Gobernador, Plate LXVI 443
Egyptian Hieroglyphics, Plate LXVIII 441
Top of Altar at Copan, Plate LXVIII = V^a 454
Mexican Hieroglyphical Writing, Plate LXIX 454

In each plate I have numbered the hieroglyphs, giving each one its own number. Thus the hieroglyphs of the Copan altar (vol. i, p. 141) which I have called plate V^a, are numbered from 1 to 36 according to this scheme—

1	2	3	4	5	6
7	8	9	10	11	12
13	14	15	16	17	18
19	20	21	22	23	24
25	26	27	28	29	30
31	32	33	34	35	36

And the right hand side of the Palenque Cross tablet, as given by RAU in his memoir published by the Smithsonian Institution (1880), has the numbers—

2020	2021	2022	2023	2024	2025
2030	2031	2032	2033	2034	2035
2040	2041	2042	2043	2044	2045
2050	2051	2052	2053	2054	2055
*	*	*	*	*	*
*	*	*	*	*	*
3080	3081	3082	3083	3084	3085

These are consecutive with the numbers which I have attached to the left-hand side, as given by STEPHENS. Whenever I have stated any results here, I have also given the means by which any one can number a copy of STEPHENS's work in the way which I have adopted, and thus the means of testing my conclusions is in the hands of every one who desires to do so.

In cases where only a *part* of a hieroglyphic is referred to, I have placed its number in a parenthesis, as 1826 *see* (122), by which I mean that the character 1826 is to be compared with a part of the character 122. The advantages of this system are many: for example; a memorandum can easily be taken that two hieroglyphs are alike, thus 2072 = 2020 and 2073 = 2021. Hence the *pair* 2020 — 2021, read horizontally, occurs again at the point 2072 — 2073, etc. *Horizontal pairs* will be known by their numbers being consecutive, as 2020 — 2021; *vertical pairs* will usually be known by their numbers differing by 10. Thus, 2075 — 2085 are one above the other.

This method of naming the *chiffres*, then, is a quick and safe one, and we shall see that it lends itself to the uses required of it.

I add here the scheme according to which the principal plates at Palenque have been numbered.

PLATE XXIV (left-hand side).

37 *See* 1800	37 *See* 1800	38 *See* 1806	39	94	96	98	100	102	104	106
40	40	41	42	95	97	99 = 127	101	103	105	107
43 = 1810	43* = 46*	44	45							108 *See* 91
46 = 1810	46* = 43*	47	48							
49		50	51							
52	52* = 1820 ?	53	54			In the middle of the plate at the top.				
55	56 = 1840 ?	57 *See* 1802	58			109	115			
59	60	61	62 = 58 †			110 *See* 2020	116			
63	64	65 †	66 *See* 2025			111	117			
67 *See* 1911	68	69	70			112	118			
71 *See* 2020	72 = 281	73	74			113	119			
75	76 = 67	77	78			114	120			
79	80	81	82							
83	84	85	86 = 56 †							
86*	86*	87	88							
89	90	91	92							
93										

* Accidental error in numbering here.
† Possibly Muluc—a Maya day; the meaning is "reunion."

PLATE XXIV (right-hand side).

121 *See* 74, 86*	**122 = 86‡**	**123 = 87**	**124 = 88** *See* 61, 1822
125	**126 †** *See* 1940	**127 = 99** *See* 1940	**128** *See* (44), 64
129	**130**	**131 = 147**	**132** *See* 50, 58, 62
133	**134**	**135**	**136 = 47 ‡**
137	**138** *See* 39, 91	**139** *See* 1811	**140**
141	**142 §** *See* 54	**143**	**144** *See* 50, 58, 62, 132
145	**146**	**147 = 131** *See* 71	**148**
149	**150** *See* 56, 1882	**151**	**152**
153	**154** *See* 53	**155** *See* 50, 58, 132	**156**
157*	**158** *See* 68	**159** *See* 38	**160** *See* 46*, 49*, 52*
161 = 50 *See* 58, 62, 132	**162** *See* 50, 73, 1882	**†163=1936** *See* 57	**164** *See* 58, 62
165	**166** *See* 81 ‡	**167**	**168**
169 *See* 68 ‡	**170**	**171**	**172**
173	**174** *See* 67, 76, 90, 1910	**175** *See* 57	**176** *See* 126
177	**178** *See* 43*	**179**	**180** *See* 50, 58, 62
181	**182** *See* 57, 163, 1936	**183**	**184**
			185

* Possibly Ymix—a Maya day.
‡ Possibly Chuen—a Maya day; meaning "a board," "a tree."
† Possibly Ahau—a Maya day; meaning "king."
§ Possibly Ezanab—a Maya day.

PLATE LII.

200	201	202	203	204	205	206	207	208	209	Line 1.
210	211	212		214	215	216	217	218	219 *See* 2020	
220 *See* 2030	221	222 *See* 2060	223	224=2060	225	226	227	228	229 *See* 1811–3	Line 2.
230 *See* 1822	231	232		234	235	236	237	238	239	
240	241	242=2020	243=1951	244	245	246	247	248	249	Line 3.
250	251	252 *See* 214		254	255	256	257	258	259=1943	
260	261	262	263	264 *See* 2020	265 *See* 2021	266 *See* 2022	267	268	269	Line 4.
270	271			274=244	275	276	277	278 *See* 204	279	
280 *See* 1820	281=72	282	283	284	285	286 *See* 385	287	288		Line 5.
290				294	295	296	297	298	299	
300 *See* 203	301	302	303=360	304	305	306	307			Line 6.
310	311			314	315	316	317	318	319	
320	321	322	323 *See* 203	324=1824 *See* 204	325 *See* 285	326 *See* 305	327	328	329	Line 7.
330	331	332 *See* 209		334	335	336	337	338	339	
340	341	342 *See* 209	343	344 *See* 322	345	346	347	348	349	Line 8.
350	351	352		354 *See* 267, 298	355	356=1822 *See* 230	357	358	359	
360=303	361	362	363	364	365	366 *See* 351	367 *See* 303, 360	368	369	Line 9.
370	371				375	376	377	378	379	
380	381	382	383	384	385 *See* 286, 1822	386	387	388	389	Line 10.
390	391	392		394	395	396	397	398	399	
400	401	402 *See* 326	403=360/367	404	405	406	407 *See* 360	408	409	Line 11.
410 *See* 326	411	412		414	415	416 *See* 324	417	418	419	
420	421	422	423	424	425	426 *See* 324	427			Line 12.
430		432		434	435	436	437	438	439	

PLATE LIII.

[The upper left-hand square is No. 500, the upper right is 519, the lower left-hand is 720, the lower right is 739. All the squares from 500 to 508, 520 to 528, 530 to 538, etc., up to 720 to 728, are obliterated (and their numbers omitted here) except a few.]

		509	510	511	512 *See* 1967	513	514	515 *See* 509	516 *See* 510	517	518	519
		529 *See* 3012	530	531	532	533	534	535	536	537	538	539
		549	550	551	552	553	554	555	556 *See* 162	557	558	559
			570	571	572	573 *See* 1823	574	575	576	577	578	579
		589	590	591	592	593	594	595	596	597	598	599
604	605	609	610	611 *See* 571	612	613	614	615	616	617	618	619
	628	629	630	631	632	633	634	635	636 *See* 3054	637	638	639
		649	650	651	652	653	654	655 *See* 150, 1882	656	657	658	659
		669	670	671 = 324 *See* 2042	672 = 322?	673 = 323?	674 *See* 77	675	676	677 *See* 1802	678	679
	688	689	690	691	692	693	694	695	696	697	698	699
	708	709	710	711	712	713 = 1802	714	715	716	717 *See* 439	718	719
		729	730 = 1845	731	732	733	734	735	736	737 *See* 2020	738	739

PLATE LIV.

800	801	802	803	804	805	806	807	808 *See* 1882	809	810	811 *See* 26	812 *See* 1940	813 *See* 1941, 3011
900	901	902	903	904	905	906	907=1003	908 *See* 2020	909	910 *See* 1310	911	912	913
1000	1001	1002	1003=907	1004	1005	1006	1007	1008	1009 *See* 2021	1010 *See* 3054	1011 *See* 1811–2	1012	1013
1100	1101	1102=717	1103	1104 *See* 1820	1105=2020	1106 *See* 2021	1107 *See* 1840	1108 *See* 1841?	1109	1110=1209	1113	1114	1115
1200	1201	1202=1110 *See* 3054	1203	1204=1008	1205	1206	1207 *See* 1823	1208	1209=1110	1210	1211	1212	1213
1300	1301	1302	1303=1910	1304	1305	1306	1307	1308	1309	1310 *See* 910	1311	1312	1313
1400=1823	1401	1402	1403	1404	1405	1406	1407	1408	1409	1410	1411	1412	1413
1500	1501	1502=1010	1503	1504=717/1102	1505	1506	1507	1508	1509	1510	1511	1512	1513
1600	1601	1602	1603	1604	1605	1606	1607	1608	1609=1304	1610=1305	1611=1010	1612	1613
1700	1701	1702=1911	1703	1704	1705	1706	1707	1708	1709	1710	1711=1702/1911	1712=1708	1713

PLATE LVI (left-hand side—Palenque Cross).

1800	1801	1802 *See* 163, 175	1803	1804			1961	1962	1963	1964	1965
	1805 *See* 155	1806	1807 *See* 138	1808							1966
* 1810 *See* 150	1811 *See* 139, 179	1812 *See* (1852)	1813 *See* 131, 146	1814 *See* 126, 127, 176	1815	1816					1967
1820 *See* 161	1821	1822 *See* 124	1823	1824	1825	1826 *See* 122, 160					1968
1830=1820 *See* 161	1831	1832 *See* 123, 124	1833 *See* 121	1834 *See* 163	1835 *See* 182	1836 *See* 123					1969
1840	1841	1842 *See* 1835	1843 *See* 124, 1836	1844	1845=1822 *See* 124	1846 *See* 179					1970
1850	1851	1852	1853 *See* 122	1854=1806	1855						
1860	1861	1862 *See* 126, 127	1863	1864	1865=2021 *See* 144	1866 *See* 136?, 184?					
1870=1820 *See* 160, 161	1871	1872=1842? *See* 182	1873=1803	1874	1875	1876					
1880	1881	1882 *See* 150, 162	1883 *See* 124	1884=1834 *See* 163, 183	1885 *See* 132, 144						
1890 *See* 130, 158	1891 *See* 131?, 147?	1892 *See* 132?	1893	1894=1822 *See* 124	1895 *See* 144						
1900 *See* 146	1901	1902	1903 *See* 157, 182	1904	1905=1803						1971 *See* 1802
1910 *See* 174	1911 *See* 174	1912 *See* 141	1913=1834	1914	1915						1972
1920	1921	1922 *See* 123	1923 *See* 124	1924	1925						1973
1930	1931	1932=1811-2?	1933	1934	1935=1884 *See* 183		1975				1974
1940=1862 *See* 126, 127	1941	1942	1943	1944=1922 *See* 123	1945=1923 *See* 124						
1950 *See* 164	1951	1952	1953	1954	1955						

* At and after this place, in vertical columns, 1810-1-2, 1820-1-2, 1830-1-2, 1840-1-2, and 1860-1-2 may be taken as 2 or 3 symbols. I have assumed them to be 3.

PLATE LVI (right-hand side—Palenque Cross).

1980	1981	1982	2020 *See* 131, 147, 150	2021 *See* 144	2022	2023	2024 *See* 163	2025=123
		1983	2030 *See* 132	2031 *See* 134, 146, 149	2032 *See* 1811, 1832	2033	2034 *See* 124	2035
		1984 *See* 131, 147	2040	2041	2042	2043=123	2044 *See* 131, 147	2045 *See* 132, 150
		2000	2050	2051	2052	2053	2054	2055
		2001 *See* 182	2060	2061	2062	2063	2064	2065
		2002=122	2070	2071	2072	2073	2074	2075
		2003=2021 *See* 130	2080	2081	2082	2083	2084	2085
		2004	2090	2091	2092	2093	2094	2095
		2005	3000	3001	3002	3003	3004	3005
1976	1978	2006 *See* 1902, 1903	3010	3011	3012	3013	3014	3015
1977	1979	2007 *See* 1821	3020	3021	3022	3023	3024	3025
		2008	3030	3031	3032	3033	3034	3035
		2009	3040	3041	3042	3043	3044	3045
		2010 *See* 184	3050	3051	3052	3053	3054	3055
		2011 *See* 131, 2020	3060	3061	3062	3063	3064	3065
		2012	3070	3071	3072	3073	3074	3075
		2013	3080	3081	3082	3083	3084	3085
		2014						

* These four each side of the main stem of the cross. 1976 = *Ezanab*—a Maya day

IV.

IN WHAT ORDER ARE THE HIEROGLYPHICS READ?

Before any advance can be made in the deciphering of the hieroglyphic inscriptions, it is necessary to know in what directions, along what lines or columns, the verbal sense proceeds.

All the inscriptions that I know of are in rectangular figures. At Copan they are usually in squares. At Palenque the longest inscriptions are in rectangles. At Palenque again, there are some cases where there is a single horizontal line of hieroglyphs over a pictorial tablet. Here clearly the only question is, do the characters proceed from left to right, or from right to left? In other cases as in the tablet of the cross, there are vertical columns. The question here is, shall we read up or down?

Now, the hieroglyphs must be phonetic or pictorial, or a mixture of the two. If they are phonetic, it will take more than one symbol to make a word, and we shall have groups of like characters when the same word is written in two places. If the signs are pictorial, the same thing will follow; that is, we shall have groups recurring when the same idea recurs. Further, we know that the subjects treated of in these tablets must be comparatively simple, and that *names*, as of gods, kings, etc., must necessarily recur.

The *names*, then, will be the first words deciphered. At present no single name is known. These considerations, together with our system of nomenclature, will enable us to take some steps.

Take, for example, the right-hand side of the Palenque cross tablet as given by RAU. See our figure 48, which is Plate LVI of STEPHENS (vol. ii, p. 345), with the addition of the part now in the National Museum at Washington.

Our system of numbering is here

2020	2021	2022	2023	2024	2025
2030	2031	2032	2033	2034	2035
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
3080	3081	3082	3083	3084	3085

Now pick out the duplicate hieroglyphs in this; that is, run through the tablet, and wherever 2020 occurs erase the number which fills the place and write in 2020. Do the same for 2021, 2022, etc., down to 3084. The result will be as follows:

RIGHT-HAND SIDE OF PALENQUE CROSS TABLET (RAU).

2020	2021	2022	2023	2024	2025
2030	2031	2032	2033	2034	2035
2040	2041	2042	2025	2020	2021
2050	2051	2034	2053	2054	2055
2053	2061	2062	2063	2064	2065
2070	2071	2020	2021	2022?	2024? ?
2053	2020	2082	2083	2025	2053
2021	2091	2092	2025	2094	2095
3000	2023	2034	2053	2033	3005
3010	2083	3012	2024	3014	2091
2053	3021	2023	2020	3024	2024
2024	2025	2021	3033	2025	2034*
? 2053*	3021	3042	3043	2035	3045
3050 *See* 2082	2083	2025	2034	3054	3055
2024	2020	2035	3063	2024	2025
2021	2031	2020	2021	2035	3045
3080	3081	2091	2093	2020	2021

14 cases of horizontal pairs; 4 cases of vertical pairs; 102 characters in all, of which 51 appear more than once, so that there are but 51 independent hieroglyphs.

Here the first two lines are unchanged. In the third line we find that 2043 is the same as 2025, 2044 = 2020, 2045 = 2021, and so on, and we write the smallest number in each case.

After this is done, connect like pairs by braces whenever they are consecutive, either vertical or horizontal. Take the pair 2020 and 2021 for example; 2020 occurs eight times in the tablet, viz, as 2020, 2044, 2072, 2081, 3023, 3061, 3072, 3084. In five out of the eight cases, it is followed by 2021, viz, as 2021, 2045, 2073, 3073, 3085.

It is clear this is not the result of accident. The pair 2020 and 2021 means something, and when the two characters occur together they must be read together. There is no point of punctuation between them. We

also learn that they are not inseparable. 2020 will make sense with 2082, 3024, and 3062. Here it looks as if the writing must be read in *lines* horizontally. We do not know yet in which direction.

We must examine other cases. This is to be noticed: If the reading is in horizontal lines from left to right, then the progress is from top to bottom in columns, as the case of 3035 and 3040 shows. This occurs at the end of a line, and the corresponding *chiffre* required to make the pair is at the other end of the next line. I have marked this case with asterisks. If we must read in the lines from right to left we must necessarily read in columns from bottom to top. Thus the *lines* are connected.

A similar process with all the other tablets in STEPHENS leads to the conclusion that the reading is in lines horizontally and in columns vertically. The cases 1835–'45, 1885–'95, 1914–'24, and 1936–'46 should, however, be examined. We have now to decide at which end of the lines to begin. The reasons given by Mr. BANCROFT (*Native Races*, vol. ii, p. 782) appeared to me sufficient to decide the question before I was acquainted with his statement of them.

Therefore, the sum total of our present data, examined by a rational method, leads to the conclusion, so far as we can know from these data, that the verbal sense proceeded in *lines* from left to right, in *columns* from top to bottom; just as the present page is written, in fact.

For the present, the introduction of the method here indicated is the important step. It has, as yet, been applied only to the plates of STEPHENS' work. The definite conclusion should be made to rest on *all possible* data, some of which is not at my disposition at present. Tablets exist in great numbers at other points besides Palenque, and for the final conclusion these must also be consulted. If each one is examined in the way I have indicated, it will yield a certain answer. The direction of reading for that plate can be thus determined. At Palenque the progress is in the order I have indicated.

V.

THE CARD-CATALOGUE OF HIEROGLYPHS.

It has already been explained how a system of nomenclature was gradually formed. As I have said, this is not perfect, but it is sufficiently simple and full for the purpose. By it, every plate in STEPHENS' work receives a number and every hieroglyph in each plate is likewise numbered.

This was first done in my private copy of the work. I then procured another copy and duplicated these numbers both for plates and single *chiffres*. The plates of this copy were then cut up into single hiero-

glyphs and each single hieroglyph was mounted on a library card, as follows:

No. 2020.	Hieroglyph.	Plate LVI.
Same as Numbers.		Similar to Numbers.
.....		.....
.....		.....
.....		.....
.....		.....
.....		.....

The cards were 6.5 by 4.5 inches. The *chiffre* was pasted on, in the center of the top space. Its number and the plate from which it came were placed as in the cut. The numbers of hieroglyphs which resembled the one in question could be written on the right half of the card, and the numbers corresponding to different recurrences of this hieroglyph occupied the left half.

All this part of the work was most faithfully and intelligently performed for me by Miss MARY LOCKWOOD, to whom I desire to express the full amount of my obligations. A mistake in any part would have been fatal. But no mistakes occurred.

These cards could now be arranged in any way I saw fit. The simple *chiffres*, for example, could be placed so as to bring like ones together. A compound hieroglyph could be placed among simple ones agreeing with any one of its components, and so on.

The expense of forming this card catalogue of about 1,500 single hieroglyphs was borne by the Ethnological Bureau of the Smithsonian Institution, and the catalogue is the property of that bureau, forming only one of its many rich collections of American picture-writings.

VI.

COMPARISON OF PLATES I AND IV (COPAN).

In examining the various statues at Copan, as given by STEPHENS, one naturally looks for points of striking resemblance or striking difference. Where all is unknown, even the smallest sign is examined, in the hope that it may prove a clue. The Plate I, Fig. 49, has a twisted knot (the "square knot" of sailors) of cords over its head, and above this is a *chiffre* composed of ellipses, and above this again a sign like a sea-shell. A natural suggestion was that these might be the signs for the name of the personage depicted in Plate I. If this is so and we should find the same sign elsewhere in connection with a figure, we should expect to find this second figure like the first in every particular. This would be

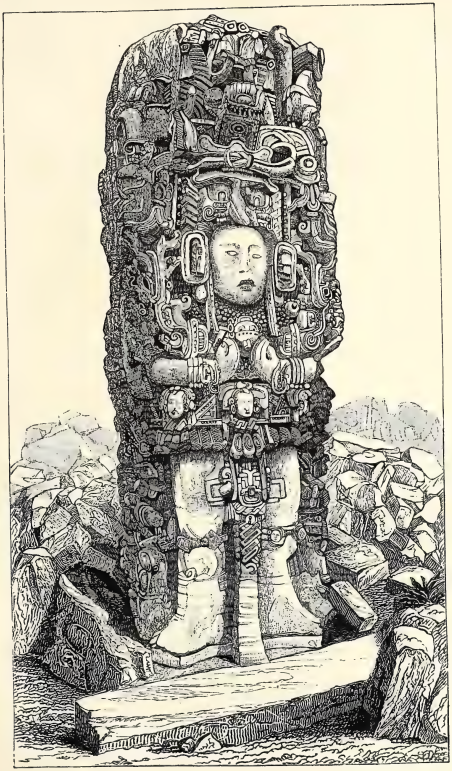

Fig. 49.—Statue at Copan.

Fig. 50.—Statue at Copan.

a rigid test of the theory. After looking through the Palenque series, and finding no similar figure and sign, I examined the Copan series, and in Plate IV, our Fig. 50, I found the same signs exactly; *i. e.*, the knot and the two *chiffres*.

At first sight there is only the most general resemblance between the personages represented in the two plates; as STEPHENS says in his original account of them, they are "in many respects similar." If he had known them to be the same, he would not have wasted his time in drawing them. The scale of the two drawings and of the two statues is different; but the two personages are the same identically. Figure for figure, ornament for ornament, they correspond. It is unnecessary to give the minute comparison here in words. It can be made by any one from the two plates herewith. Take any part of Plate I, find the corresponding part of Plate IV, and whether it is human feature or sculptured ornament the two will be found to be the same.

Take the middle face depending from the belt in each plate. The earrings are the same; the ornament below the chin, the knot above the head, the complicated beadwork on each side of this face, all are the same. The bracelets of the right arms of the main figures have each the forked serpent tongue, and the left arm bracelets are ornamented alike. The crosses with beads almost inclosed in the right hands are alike; the elliptic ornaments above each wrist, the knots and *chiffres* over the serpent masks which surmount the faces, all are the same. In the steel plates given by STEPHENS there are even more coincidences to be seen than in the excellent wood-cuts here given, which have been copied from them.

Here, then, is an important fact. The theory that the *chiffre* over the forehead is characteristic, though it is not definitively proved, receives strong confirmation. The parts which have been lost by the effects of time on one statue can be supplied from the other. Better than all, we gain a test of the minuteness with which the sculptors worked, and an idea of how close the adherence to a type was required to be. Granting once that the two personages are the same (a fact about which I conceive there can be no possible doubt, since the chances in favor are litterally thousands to one), we learn what license was allowed, and what synonyms in stone might be employed. Thus, the ornament suspended from the neck in Plate IV is clearly a tiger's skull. That from the neck of Plate I has been shown to be the derived form of a skull by Dr. HARRISON ALLEN,* and we now know that this common form relates not to the human skull, as Dr. ALLEN has supposed, but to that of the tiger. We shall find this figure often repeated, and the identification is of importance. This is a case in regard to synonyms. The kind of symbolism so ably treated by Dr. ALLEN is well exemplified in the conventional sign for the *crotalus* jaw at the mouth of the mask over the head of each figure. This is again found on the body of the snake in

*The Life Form in Art, Trans. Amer. Phil. Soc., vol. xv, 1873, p. 325.

Plate LX, and in other places. Other important questions can be settled by comparison of the two plates. For example, at Palenque we often find a sign composed of a half ellipse, inside of which bars are drawn. I shall elsewhere show that there is reason to believe the ellipse is to represent the concave of the sky, its diameter to be the level earth, and in some cases at least the bars to be the descending and fertilizing rain. The bars are sometimes two, three, and sometimes four in number. Are these variants of a single sign, or are they synonyms? Before the discovery of the identity of the personages in these two plates, this question could not be answered. Now we can say that they are not synonyms, or at least that they must be considered separately. To show this, examine the bands just above the wristlets of the two figures. Over the left hands of the figures the bars are two in number; over the right hands there are four. This exact similarity is not accidental; there is a meaning in it, and we must search for its explanation elsewhere, but we now have a valuable test of what needs to be regarded, and of what, on the other hand, may be passed over as accidental or unimportant.

One other case needs mentioning here, as it will be of future use. From the waist of each figure depend nine oval solids, six being hatched over like pine cones and the three central ones having two ovals, one within the other, engraved on them. In Plate IV the inner ovals are all on the right-hand side of the outer ovals. Would they mean the same if they were on the left-hand side? Plate I enables us to say that they would, since one of these inner ovals has been put by the artist on that side by accident or by an allowed caprice. It is by furnishing us with tests and criteria like these that the proof of the identity of these two plates is immediately important. In other ways, too, the proof is valuable and interesting, but we need not discuss them at this time.

These statues, then, are to us a dictionary of synonyms in stone—a test of the degree of adherence to a prototype which was exacted, and a criterion of the kind of minor differences which must be noticed in any rigid study.

I have not insisted more on the resemblances, since the accompanying figures present a demonstration. Let those who wish to verify these resemblances compare minutely the ornaments above the knees of the two figures, those about the waists, above the heads, and the square knots, etc., etc.

VII.

ARE THE HIEROGLYPHS OF COPAN AND PALENQUE IDENTICAL?

One of the first questions to be settled is whether the same system of writing was employed at Palenque and at Copan. Before any study of the meanings of the separate *chiffres* can be made, we must have our material properly assorted, and must not include in the figures we are examining for the detection of a clue, any which may belong to a system possibly very different.

The opinion of STEPHENS and of later writers is confirmed by my comparison of the Palenque and the Copan series; that is, it becomes evident that the latter series is far the older.

In Nicaragua and Copan the statues of gods were placed at the foot of the pyramid; farther north, as at Palenque, they were placed in temples at the summit. Such differences show a marked change in customs, and must have required much time for their accomplishment. In this time did the picture-writing change, or, indeed, was it ever identical?

To settle the question whether they were written on the same system, I give here the results of a rapid survey of the card-catalogue of hieroglyphs. A more minute examination is not necessary, as the present one is quite sufficient to show that the system employed at the two places was the same in its general character and almost identical even in details. The practical result of this conclusion is that similar characters of the Copan and Palenque series may be used interchangeably.

A detailed study of the undoubted synonyms of the two places will afford much light on the manner in which these characters were gradually evolved. This is not the place for such a study, but it is interesting to remark how, even in unmistakable synonyms, the Palenque character is always the most conventional, the least pictorial; that is, the latest. Examples of this are No. 7, Plate V[a], and No. 1969, Plate LVI. The *mask* in profile which forms the left-hand edge of No. 7 seems to have been conventionalized into the two hooks and the ball, which have the same place in No. 1969.

No. 7 = = No. 1969.

FIG. 51.—Synonomous hieroglyphs from Copan and Palenque.

The larger of these two was cut on stone, the smaller in stucco.

The mask has been changed into the ball and hooks; the angular nose ornament into a single ball, easier to make and quite as significant to the Maya priest. But to us the older (Copan) figure is infinitely more significant. The curious rows of little balls which are often placed at

the left-hand edge of the various *chiffres* are also conventions for older forms. It is to be noted that these balls always occur on the left hand of the hieroglyphs, except in one case, the *chiffre* 1975 in the Palenque cross tablet, on which the left-hand acolyte stands.

The conclusion that the two series are both written on the same system, and that like *chiffres* occurring at the two places are synonyms, will, I think, be sufficiently evident to any one who will himself examine the following cases. It is the *nature* of the agreements which proves the thesis, and not the number of cases here cited. The reader will remember that the Copan series comprises Plates I to XXIII, inclusive; the Palenque series, Plate XXIV and higher numbers.

The sign of the group of Mexican gods who relate to hell, *i. e.*, a circle with a central dot, and with four small segments cut out at four equally distant points of its circumference, is found in No. 4291, Plate XXII, and in many of the Palenque plates, as Plate LVI, Nos. 2090, 2073, 2045, 2021, etc. In both places this sign is worn by human figures just below the ear.

The same sign occurs as an important part of No. 4271, Plate XXII, and No. 4118, Plate XIII (Copan), and No. 2064, Plate LVI (Palenque), etc.

No. 7, Plate V[a], and No. 1969, Plate LVI, I regard as absolutely identical. These are both human figures. No. 12, Plate V[a], and No. 637, Plate LIII, are probably the same. These probably represent or relate to the long-nosed divinity, YACATEUCTLI, the Mexican god of commerce, etc., or rather to his Maya representative.

The sign of TLALOC, or rather the family of TLALOCS, the gods of rain, floods, and waters, is an eye (or sometimes a mouth), around which there is a double line drawn. I take No. 26, Plate V[a], of the Copan series, and Nos. 154 and 165, Plate XXIV, to be corresponding references to members of this family. No. 4, Plate V[a], and No. 155 also correspond.

No. 4242, Plate XXII, is probably related to No. 53, Plate XXIV and its congeners.

Nos. 14 and 34, Plate V[a], are clearly related to No. 900, Plate LIV, Nos. 127 and 176, Plate XXIV, No. 3010, Plate LVI, and many others.

Plate III[a] of Copan is evidently identically the same as the No. 75 of the Palenque Plate No. XXIV.

The right half of No. 27, Plate V[a], is the same as the right half of Nos. 3020, 3040, and many others of Plate LVI.

No. 17, Plate V[a], is related to No. 2051, Plate LVI, and many others like it.

The major part of No. 4105, Plate XIII, is the same as No. 124, Plate XXIV, etc.

It is not necessary to add a greater number of examples here. The card-catalogue which I have mentioned enables me to at once pick out all the cases of which the above are specimens, taken just as they fell under my eye in rapidly turning over the cards. They therefore represent the

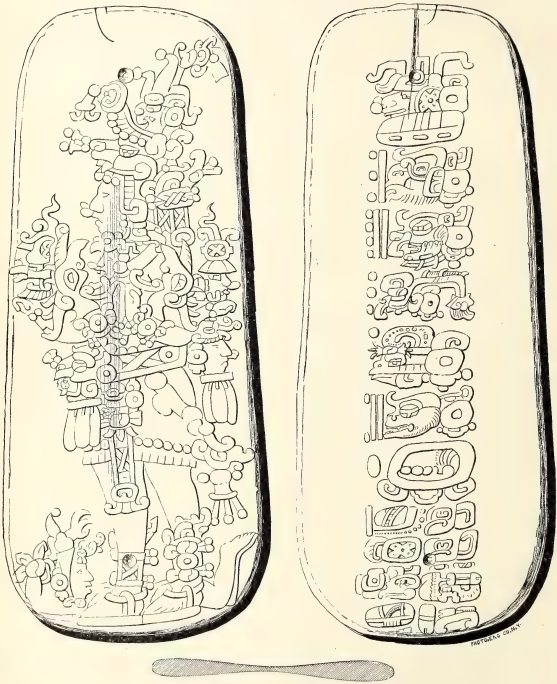

FIG. 52.—Yucatec Stone.

average agreement, neither more nor less. Taken together they show that the same signs were used at Copan and at Palenque. As the same symbols used at both places occur in like positions in regard to the human face, etc., I conclude that not only were the same signs used at both places, but that these signs had the same meaning; *i. e.*, were truly synonyms. In future I shall regard this as demonstrated.

VIII.

HUITZILOPOCHTLI (MEXICAN GOD OF WAR), TEOYAOMIQUI (MEXICAN GODDESS OF DEATH), MICLANTECUTLI (MEXICAN GOD OF HELL), AND TLALOC (MEXICAN RAIN-GOD), CONSIDERED IN RELATION TO CENTRAL AMERICAN DIVINITIES.

In the *Congrès des Américanistes, session de Luxembourg*, vol. ii, p. 283, is a report of a memoir of Dr. LEEMANS, entitled "Description de quelques antiquités américaines conservées dans le Musée royal néerlandais d'antiquités à Leide." On page 299 we find—

M. G.-H.-BAND, de Arnheim, a eu la bonté de me confier quelques antiquités provenant des anciens habitants du Yucatan et de l'Amérique Centrale, avec autorisation d'en faire prendre des fac-similes pour le Musée, ce qui me permet de les faire connaître aux membres du Congrès. Elles ont été trouvées enfouies à une grande profondeur dans le sol, lors de la construction d'un canal, vers la rivière Gracioza, près de San Filippo, sur la frontière du Honduras britannique et de la république de Guatémala par M. S.-A.-van BRAAM, ingénieur néerlandais au service de la Guatémala Company.

From the maps given in STIELER'S Hand-Atlas and in BANCROFT'S Native Races of the Pacific States I find that these relics were found 308 miles from Uxmal, 207 miles from Palenque, 92 miles from Copan, and 655 miles from the city of Mexico, the distances being in a straight line from place to place.

The one of these objects with which we are now concerned is figured in Plate (63) of the work quoted, and is reproduced here as Fig. 52.

DR. LEEMANS refers to a similarity between this figure and others in Stephens' Travels in Central America, but gives no general comparison.

I wish to direct attention to some of the points of this cut. The *chiffre* or symbol of the principal figure is, perhaps, represented in his belt, and is a St. Andrew's cross, with a circle at each end of it. Inside the large circle is a smaller one. It may be said, in passing, that the cross probably relates to the *air* and the circle to the *sun*.

The main figure has two hands folded against his breast. Two other arms are extended, one in front, the other behind, which carry two birds. Each arm has a bracelet. This second pair of hands is not described by DR. LEEMANS. The two birds are exact duplicates, except that the eye of one is shut, of the other open. Just above the bill of each bird is something which might be taken as a second bill (which probably is not,

however), and on this and on the back of each bird are five spines or claws. The corresponding claws are curved and shaped alike in the two sets. The birds are fastened to the neck of the person represented by two ornaments, which are alike, and which seem to be the usual hieroglyph of the *crotalus* jaw. These jaws are placed similarly with respect to each bird. In KINGSBOROUGH'S Mexican Antiquities, vol. I, Plate X, we find the parrot as the sign of TONATIHU, the sun, and in Plate XXV with NAOLIN, the sun. On a level with the nose of the principal figure are two symbols, one in front and one behind, each inclosing a St. Andrew's cross, and surmounted by what seems to be a flaming fire. It is probably the *chiffre* of the wind, as the cross is of the rain. Below the rear one of these is a head with protruding tongue (the sign of QUETZALCOATL); below the other a hieroglyph (perhaps a bearded face). Each of these is upborne by a hand. It is to be noticed, also, that these last arms have bracelets different from the pair on the breast.

In passing, it may be noted that the head in rear is under a cross, and has on its cheek the symbol **U**. These are the symbols of the left-hand figure in the Palenque cross tablet.

The head hanging from the rear of the belt has an *open* eye (like that of the principal figure), and above it is a crotalus mask, with open eye, and teeth, and forked fangs. The principal figure wears over his head a mask, with open mouth, and with tusks, and above this mask is the eagle's head. This eagle is a sign of TLALOC, at least in Yucatan. In Mexico the eagle was part of the insignia of TETZCATLIPOCA, "the devil," who overthrew the good QUETZALCOATL and reintroduced human sacrifice.

The characteristics of the principal figure, 63, are then briefly as follows:

I. His *chiffre* is an air-cross with the sun-circle.

II. He has four hands.

III. He bears two birds as a symbol.

IV. The claws or spikes on the backs of these are significant.

V. The mask with tusks over the head.

VI. The head worn at the belt.

VII. The captive trodden under foot.

VIII. The chain from the belt attached to a kind of ornament or symbol.

IX. The twisted flames (?) or winds (?) on each side of the figure.

X. His association with QUETZALCOATL or CUCULKAN, as shown by the mouth with protruding tongue, and with TLALOC or TETZCATLIPOCA, as shown by the eagle's head.

We may note here for reference the signification of one of the hieroglyphs in the right-hand half of Fig. 52, *i. e.*, in that half which contains only writing. The topmost *chiffre* is undoubtedly the name, or part of the name, of the principal figure represented in the other half. It is in pure picture-writing; that is, it expresses the sum of his attributes.

It has the crotalus mask, with nose ornament, which he wears over his face; then the cross, with the "five feathers" of Mexico, and the sun symbol. These are in the middle of the *chiffre*. Below these the oval may be, and probably is, heaven, with the rain descending and producing from the surface of the earth (the long axis of the ellipse), the seed, of which three grains are depicted.

We know by the occurrence of the hieroglyphs on the reverse side of the stone that this is not of Aztec sculpture. These symbols are of the same sort as those at Copan, Palenque, etc., and I shall show later that some of them occur in the Palenque tablets. Hence, we know this engraving to be Yucatec and not Aztec in its origin. If it had been sculptured on one side only, and these hieroglyphs omitted, I am satisfied that the facts which I shall point out in the next paragraphs would have led to the conclusion that this stone was Mexican in its origin. Fortunately the native artist had the time to sculpture the Yucatec hieroglyphs, which are the proof of its true origin. It was not dropped by a traveling Aztec; it was made by a Yucatec.

In passing, it may be said that the upper left-hand, hieroglyph of Plate XIII most probably repeats this name.

I collect from the third volume of BANCROFT's *Native Races*, chapter viii, such descriptions of HUITZILOPOCHTLI as he was represented among the Mexicans as will be of use to us in our comparisons. No display of learning in giving the references to the original works is necessary here, since Mr. BANCROFT has placed all these in order and culled them for a use like the present. It will suffice once for all to refer the critical reader to this volume, and to express the highest sense of obligation to Mr. BANCROFT's compilation, which renders a survey of the characteristic features of the American divinities easy.

In Mexico, then, this god had, among other symbols, "five balls of feathers arranged in the form of a cross." This was in reference to the mysterious conception of his mother through the *powers of the air*. The upper hieroglyph in Fig. 52, and one of the lower ones, contain this sign: "In his right hand he had an azured staff cutte in fashion of a waving snake." (See Plate LXI of STEPHENS.) "Joining to the temple of this idol there was a piece of less work, where there was another idol they called TLALOC. These two idolls were alwayes together, for that they held them as companions and of equal power."

To his temple "there were foure gates," in allusion to the form of the cross. The temple was surrounded by rows of skulls (as at Copan) and the temple itself was upon a high pyramid. SOLIS says the war god sat "on a throne supported by a blue globe. From this, supposed to represent the heavens, projected four staves with serpents' heads. (See Plate XXIV, STEPHENS.) "The image bore on its head a bird of wrought plumes," "its right hand rested upon a crooked serpent." "Upon the left arm was a buckler bearing five white plums arranged in form of a cross." SAHAGUN describes his device as a dragon's head, "frightful in the extreme, and casting fire out of his mouth."

HERRARA describes HUITZILOPOCHTLI and TEZCATLIPOCA together, and says they were "beset with pieces of gold wrought like birds, beasts, and *fishes*." "For collars, they had ten hearts of men," "and in their necks Death painted."

TORQUEMADA derives the *name* of the war god in two ways. According to some it is composed of two words, one signifying "a humming bird" and the other "a sorcerer that spits fire." Others say that the last word means "the left hand," so that the whole name would mean "the shining feathered left hand." "This god it was that led out the Mexicans from their own land and brought them into Anáhuac." Besides his regular statue, set up in Mexico, "there was another renewed every year, made of different kinds of grains and seeds, moistened with the blood of children." This was in allusion to the nature side of the god, as fully explained by MÜLLER (*Americanische Urreligionen*).

No description will give a better idea of the general features of this god than the following cuts from BANCROFT'S *Native Races*, which are copied from LEON Y GAMA, *Las Dos Piedras*, etc. Figs. 53 and 54 are

FIG. 53.—HUITZILOPOCHTLI (front).

FIG. 54.—HUITZILOPOCHTLI (side).

the war god himself; Fig. 55 is the back of the former statue on a larger scale; Fig. 56 is the god of hell, and was engraved on the bottom of the block.

These three were a trinity well nigh inseparable. It has been doubted whether they were not different attributes of the same personage. In the natural course of things the primitive idea would become differentiated into its parts, and in process of time the most important of the parts would each receive a separate pictorial representation.

FIG. 56.—MICLANTECUTLI.

By referring back a few pages the reader will find summarized the principal characteristics of the Central American figure represented in Fig. 52. He will also have noticed the remarkable agreement between the attributes of this figure and

FIG. 55.—Huitzilopochtli (back).

FIG. 57.—Adoratorio.

those contained in the cuts or in the descriptions of the Mexican gods. Thus—

I. The symbol of both was the cross.

II. Fig. 52 and Fig. 55 each have four hands.*

III. Both have birds as symbols.

It is difficult to regard the bird of Fig. 52 as a humming bird, as it more resembles the parrot, which, as is well known, was a symbol of some of the Central American gods. Its occurrence here in connection with the four arms fixes it, however, as the bird symbol of HUITZILOPOCHTLI. In the *Ms. Troano*, plate XXXI (lower right-hand figure), we find this same personage with his two parrots, along with TLALOC, the god of rain.

IV. The claws of the Mexican statue may be symbolized by the spikes on the back of the birds in Fig. 52, but these latter appear to me to relate rather to the fangs and teeth of the various crotalus heads of the statues.

V. The mask, with tusks, of Fig. 52, is the same as that at the top of Fig. 55, where we see that they represent the teeth of a serpent, and not the tusks of an animal. This is shown by the forked tongue beneath. The three groups of four dots each on HUITZILOPOCHTLI'S statue are references to his relationship with TLALOC.

With these main and striking duplications, and with other minor and corroborative resemblances, which the reader can see for himself, there is no doubt but that the two figures, Mexican and Yucatec, relate to the same personage. The Yucatec figure combines several of the attributes of the various members of the Mexican trinity named above, but we should not be surprised at this, for, as has been said, some writers consider that this trinity was one only of attributes and not of persons.

What has been given above is sufficient to show that the personage represented in Fig. 52 is the Yucatec equivalent of HUITZILOPOCHTLI, and has relations to his trinity named at the head of this section, and also to the family of TLALOC. I am not aware that the relationship of the Yucatec and Aztec gods has been so directly shown, on evidence almost purely pictorial, and therefore free from a certain kind of bias.

If the conclusions above stated are true, there will be many corroborations of them, and the most prominent of these I proceed to give, as it involves the explanation of one of the most important tablets of Palenque, parts of which are shown in Plates XXIV, LX, LXI, and LXII, vol. ii, of STEPHENS.

Plate LXII, Fig. 57, represents the "Adoratorio or Alta Casa, No. 3" of Palenque. This is nothing else than the temple of the god HUITZILOPOCHTLI and of his equal, TLALOC. The god of war is shown on a larger scale in Plate LXI, Fig. 58, while TLALOC is given in Plate LX, Fig. 59, and the tablet inside the temple in Plate XXIV, Fig. 60. The

* From KINGSBOROUGH, vol. i, plate 48, it appears that TLACLI TONATIO may have had four hands. His name meant (?) Let there be light.

resemblances of Plate XXIV and of the Palenque cross tablet and their meanings will be considered further on.

Returning to Plate LXII, the symbols of the roof and cornice refer to these two divinities. The faces at the ends of the cornice, with the double lines for eye and mouth, are unmistakable TLALOC signs. The association of the two gods in one temple, as at Mexico, is a strong corroboration.

Let us now take Plate LXI, Fig. 58, which represents HUITZILOPOCHTLI, or rather, the Yucatec equivalent of this Aztec god. I shall refer to him by the Aztec appelation, but I shall in future write it in italics; and in general the Yucatec equivalents of Aztec personages in italics, and the Aztec names in small capitals.

Compare Fig. 52 and the Plate LXI (Fig. 58). As the two plates are before the reader, I need only point out the main resemblances, and, what is more important, the differences.

The sandals, the belt, its front pendant, the bracelets, the neck ornament, the helmet, should be examined. The four hands of Fig. 52 are not in LXI, nor the parrots; but if we refer to KINGSBOROUGH, Vol. II, Plates 6 and 7 of the LAUD manuscript, we shall find figures of HUITZILOPOCHTLI with a parrot, and of TLALOC with the stork with a fish in its mouth, as in the head-dress here. The prostrate figure of Fig. 52 is here led by a chain. At Labphak (BANCROFT, Vol. iv., p. 251), he is held aloft in the air, and he is on what *may be* a sacrificial yoke. The *Tlaloc* eagle is in the head of the staff carried in the hand. This eagle is found in the second line from the bottom of Fig. 52, we may remark in passing. Notice also the crescent moon in the ornament back of the shoulders of the personage of Fig. 58. The twisted cords which form the bottom of this ornament are in the hieroglyph No. 37, Plate XXIV (Fig. 60).

Turning now to Plate LX (Fig. 59).

This I take to be the sorcerer *Tlaloc.* He is blowing the wind from his mouth; he has the eagle in his head-dress, the jaw with grinders, the peculiar eye, the four TLALOC dots over his ear and on it, the snake between his legs, curved in the form of a yoke (this is known to be a serpent by the conventional crotalus signs of jaw and rattles on it in nine places), the four TLALOC dots again in his head-dress, etc. He has a leopard skin on his back (the tiger was the earth in Mexico) and his naked feet have peculiar anklets which should be noticed.

Although I am deferring the examination of the hieroglyphs to a later section, the *chiffre* 3201 should be noticed. It is the TLALOC eye again, and 3203 is the *chiffre* of the Mexican gods of hell.

In passing I may just refer the reader to p. 164, Vol. ii, of STEPHENS' book on Yucatan, where a figure occurring at Labphax is given. This I take to be the same as *Huitzilopochtli* of Plate LXI. Also in the MS. *Troano*, published by BRASSEUR DE BOURBOURG, a figure in Plate XXV and in other plates sits on a hieroglyph like 3201, and is

FIG. 58.—Maya War God.

Fig. 59.—Maya Rain God.

Fig. 60.—Th

enque.

Tlaloc. This is known by the head-dress, the teeth, the air-trumpet, the serpent symbol, etc. In Plates XXVIII, XXXI, and XXXIII of the same work HUITZILOPOCHTLI and TLALOC are represented together, in various adventures.

In Plate LX (Fig. 59) notice also the *chiffre* on the tassels before and behind the main personage.

Now turn to the Plate XXIV (Fig. 60), which is the main object in the "Adoratorio" (Fig. 57), where the human figures serve as flankers.

First examine the caryatides who support the central structure. These are *Tlalocs.* Each has an eagle over his face, is clothed in leopard skin, has the characteristic eye and teeth, and the wristlets of Plate LX (Fig. 59).

A vertical line through the center of Plate XXIV (Fig. 60) would separate the figures and ornaments into two groups. These groups are very similar, but never identical, and this holds good down to the minutest particulars and is not the result of accident. One side (the right-hand) belongs to *Tlaloc,* the other to *Huitzilopochtli.*

The right-hand priest (let us call him, simply for a name and not to commit ourselves to a theory) has the sandals of Plate LXI; the left-hand priest the anklets of Plate LX.

The beast on which the first stands and the man who supports the other are both marked with the tassel symbol of Plate LX. There is a certain rude resemblance between the supplementary head of this beast and the pendant in front of the belt of Fig. 52. Four of these beasts supply rain to the earth with *Tlaloc* in Plate XXVI of the MS. *Troano.* The infant offered by the right-hand priest has the *two* curls on his forehead which was a necessary mark of the victims for TLALOC'S sacrifices. The center of the whole plate is a horrid mask with an open mouth. Behind this are two staves with *different* ornaments crossed in the form of the air-cross. On either hand of this the ornaments are different though similar.

A curious resemblance may be traced between the positions, etc., of these two staves and those of the figure on p. 563, vol. iv, of BANCROFT'S *Native Races,* which is a Mexican stone. Again, this latter figure has at its upper right-hand corner a crouching animal (?) very similar to the gateway ornament given in the same volume, p. 321. This last is at Palenque. I quote these two examples in passing simply to reinforce the idea of similarity between the sacred sculptures of Yucatan and Mexico.

I take it that the examination of which I have sketched the details will have left no doubt but that the personage of Fig. 52 is truly *Huitzilopochtli,* the Yucatec representative of HUITZILOPOCHTLI; that Plate LXI (Fig. 58) is the same personage; that Plate LX (Fig. 59) represents TLALOC; and that Plate XXIV (Fig. 60) is a tablet relating to the service of these two gods.

I have previously shown that the Palenque hieroglyphs are read in

order from left to right. We should naturally expect, then, that the sign for *Tlaloc* or for *Huitzilopochtli* would occupy the upper left-hand corner of Plate XXIV. In fact it does, and I was led to this discovery in the way I have indicated.

No. 37 is the Palenque manner of writing the top sign of Fig. 52. I shall call the signs of Fig. 52 *a*, *b*, *c*, etc., in order downwards.

The crouching face in *a* occupies the lower central part of No. 37. Notice also that this face occurs below the small cross in the detached ornament to the left of the central mask of Fig. 60. The crescent moon of Plate LXI (Fig. 58) is on its cheek; back of this is the sun-sign; the cross of *a* is just above its eye; the three signs for the celestial concave are at the top of 37, crossed with rain bands; the three seeds (?) are below these. The feathers are in the lower right-hand two-thirds. This is the sign or part of the sign for *Huitzilopochtli*. If a Maya Indian had seen either of these signs a few centuries ago, he would have had the successive ideas—a war-god, with a feather-symbol, related to sun and moon, to fertilizing rain and influences, to clouds and seed; that is *Huitzilopochtli*, the companion of *Tlaloc*. Or if he had seen the upper left-hand symbol of the Palenque cross tablet (1800), he would have had *related* ideas, and so on.

What I have previously said about the faithfulness with which the Yucatec artist adhered to his prototypes in signs is perfectly true, although apparently partly contradicted by the identification I have just made. When a given attribute of a god (or other personage) was to be depicted, the *chiffres* expressing this were marvellously alike. Witness the *chiffres* Nos. 2090, 2073, 2021, 2045, 3085, 3073, 3070, 3032 of the Palenque cross tablet. But directly afterwards some other attribute is to be brought out, and the *chiffre* changes; thus the hieroglyph 1009 of Plate LIV, or 265, Plate LII, has the same protruding tongue as 2021, etc., and is the same personage, but the style is quite changed. In Fig. 52, *Huitzilopochtli* is the war-god, in Plate XXIV he is the rain-god's companion; and while every attribute is accounted for, prominence is given to the special ones worshipped or celebrated. Scores of instances of this have arisen in the course of my examination.

Again, we must remember that this was no source of ambiguity to the Yucatecs, however much it may be to us. Each one of them, and specially each officiating priest, was entirely familiar with every attribute of every god of the Yucatec pantheon. The sign of the attribute brought the idea of the power of the god in that special direction; the full idea of his divinity was the integral of all these special ideas. The limits were heaven and earth.

This, then, is the first step. I consider that it is securely based, and that we may safely say that in proper names, at least, a kind of picture writing was used which was *not* phonetic.

From this point we may go on. I must again remark that great familiarity with the literature of the Aztecs and Yucatecs is needed—a famil-

iarity to which I personally cannot pertend—and that it is clear that the method to reach its full success must be applied by a true scholar in this special field.

IX.

TLALOC, OR HIS MAYA REPRESENTATIVE.

Although there is no personage of all the Maya pantheon more easy to recognize in the form of a *statue* than *Tlaloc*, there is great difficulty in being certain of *all* the hieroglyphs which relate to him. There is every reason to believe that in Yucatan, as in Mexico, there was a family of rain-gods, *Tlalocs*, and the distinguishing signs of the several members are almost impossible of separation, so long as we know so little of the special functions of each member of this family.

In Yucatan, as in Mexico, *Tlaloc's* main sign was a double line about the eye or mouth, or about both; and further, some of the *Tlalocs*, at least, were bearded.*

CUKULCAN was also bearded, but we have separated out in the next section the *chiffres*, or certainly most of them, that relate to him. Those that are left remain to be distributed among the family of rain-gods; and this, as I have said, can only be done imperfectly, on account of our slight knowledge of the character of these gods.

If we examine the plates given by STEPHENS, we shall find many pictorial allusions to *Tlaloc*. These are often used as mere ornaments or embellishments, as in borders, etc., and probably served only to notify, in a general way, the fact of the relationship of the personage represented, to this family, and probably not to convey any specific meaning.

Thus, in Plate XXXV of STEPHENS' work the upper left-hand ornament of the border is a head of *Tlaloc* with double lines about eye and mouth, and this ornament is repeated in a different form at the lower right-hand corner of the border just back of the right hand of the sitting figure, and also in the base of the border below the feet of the principal figure.

Plate XLVIII (of STEPHENS') is probably CHALCHIHUITLICUE (that is, the Yucatec equivalent of that goddess), who was the sister of *Tlaloc*. His sign occurs in the upper left-hand corner of the border, and in Plate XLIX the same sign occurs in a corresponding position.

Plate XXIV (our Fig. 60) is full of *Tlaloc* signs. The bottom of the tablet has a hieroglyph, 93 (*Huitzilopochtli*), at one end and 185 (*Tlaloc*) at the other. The leopard skin, eagle, and the crouching tiger (?) under the feet of the priest of *Tlaloc* (the right-hand figure) are all given. The infant (?) offered by this priest has two locks of curled hair at its forehead, as was prescribed for children offered to this god.

* See KINGSBOROUGH, vol. ii, Plate I, of the LAUD MS.

In Plate LVI (our Fig. 48) the mask at the foot of the cross is a human mask, and not a serpent mask, as has been ingeniously proved by Dr. HARRISON ALLEN in his paper so often quoted. It is the mask of *Tlaloc*, as shown by the teeth and corroborated (not proved) by the way in which the eye is expressed. The curved hook within the eyeball here, as in 185, stands for the air—the wind—of which *Tlaloc* was also god. The Mexicans had a similar sign for breath, message.

The *chiffre* 1975, on which *Huitzilopochtli's* priest is standing, I believe to be the synonym of 185 in Plate XXIV. Just in front of *Tlaloc's* priest is a sacrificial yoke (?), at the top of which is a face, with the eye of the *Tlalocs*, and various decorations. This face is to be found also at the lower left-hand corner of Plate XLI (of STEPHENS'), and also (?) in the same position in Plate XLII (of STEPHENS'). These will serve as subjects for further study.

Notice in Plate LVI (our Fig. 48) how the ornaments in corresponding positions on either side of the central line are similar, yet never the same. A careful study of these pairs will show how the two gods celebrated, differed. A large part, at least, of the attributes of each god is recorded in this way by antithesis. I have not made enough progress in this direction to make the very few conclusions of which I am certain worth recording. The general fact of such an antithesis is obvious when once it is pointed out, and it is in just such paths as this that advances must be looked for.

I have just mentioned, in this rapid survey of the plates of vol. ii of STEPHENS' work, the principal pictorial signs relating to *Tlaloc*. There are a number almost equally well marked in vol. i, in Plates VII, IX, X, XIII, and XV, but they need not be described. Those who are especially interested can find them for themselves.

The following brief account and plate of a *Tlaloc* inscription at Kabah will be useful for future use, and is the more interesting as it is comparatively unknown.

INSCRIPTION AT KABAH (*Yucatan*).

This hitherto unpublished inscription on a rock at Kabah is given in *Archives paléographiques*, vol. i, part ii, Plate 20. It deserves attention on account of its resemblances, but still more on account of its differences, with certain other Yucatec glyphs.

We may first compare it with the Plate LX of STEPHENS (our Fig. 59). The head-dress in Plate 20 is quite simple, and presents no resemblance to the elaborate gear of Plate LX, in which the ornament of a leaf (?), or more probably feather, cross-hatched at the end and divided symmetrically by a stem (?) or quill about which four dots are placed, seems characteristic.

Possibly, and only possibly, the square in the rear of the head of Plate 20, which has two cross-hatchings, may refer to the elaborate cross-hatchings in Plate LX. The four dots are found twice, once in

front and once in rear of the figure. The heads of the two figures have only one resemblance, but this is a very important one. The tusks belong to HUITZILOPOCHTLI and to his trinity, and specially to TLALOC, his companion.

Both Plate 20 and LX have the serpent wand or yoke clearly expressed. In LX the serpent is decorated with crotalus heads; in 20 by images of the sun (?), as in the FERJAVARY MS. (KINGSBOROUGH). The front apron or ornament of Plate 20 is of snake skin, ornamented with sun-symbols. Comparing Plate 20 with Fig. 52 (*ante*), we find quite other resemblances. The head-dress of 20 is the same as the projecting arm of the head-dress of Fig. 52; and the tusks are found in the helmet or mask of Fig. 52.

These and other resemblances show the Kabah inscription to be a TLALOC. It is interesting specially on account of its hieroglyphs, which I hope to examine subsequently. The style of this writing appears to be late, and may serve as a connecting link between the stones and the manuscripts, and it is noteworthy that even the style of the drawing itself seems to be in the manner of the Mexican MS. of LAUD, rather than in that of the Palenque stone tablets.

From the card catalogue I select the following *chiffres* as appertaining to the family of the *Tlalocs*. As I have said, these must for the present remain in a group, unseparated. Future studies will be necessary to discriminate between the special signs which relate to special members of the family. The *chiffres* are Nos. 3200; 1864; 1403; 811; 1107?; 1943?; 4114??; *b*?; 1893 (bearded faces, or faces with teeth very prominent); 166?; 4??; 807?; 62?; 155?; 26; 154?; 165?; 164?; 805; 4109; 1915?; 675??; 635?? (distinguished by the characteristic eye of the TLALOCS).

Here, again, the writing is ideographic, and not phonetic.

X.

CUKULCAN OR QUETZALCOATL.

The character 2021 occurs many times in Plate LVI (Fig. 48), and occasionally elsewhere. The personage represented is distinguished by having a protruding tongue, and was therefore at once suspected to be QUETZALCOATL. (See BANCROFT'S *Native Races*, vol. iii, p. 280.) The protruding tongue is probably a reference to his introduction of the sacrificial acts performed by wounding that member.

The rest of the sign I suppose to be the rebus of his name, "Snake-plumage"; the part cross-hatched being "snake," the feather-like ornament at the upper left-hand corner being "plumage." It is necessary, however, to prove this before accepting the theory. To do this I had recourse to Plates I and IV (Figs. 49, 50), my dictionary of synonyms.

This *cross-hatching* occurs in Plate I. In the six tassels below the waist, where the cross-hatching *might* indicate the serpent skin, notice the ends of the tassels; these are in a scroll-like form, and as if rolled or coiled up. In Plate IV they are the same, naturally. So far there is but little light.

In Plate IV, just above each wrist, is a sign composed of ellipse and bars; a little above each of these signs, among coils which may be serpent coils, and on the horizontal line through the top of the necklace pendant, are two surfaces cross-hatched all over. What do these mean? Referring to Plate I, we find, in exactly the same relative situation, the forked tongue and the rattles of the crotalus. These are, then, synonyms, and the *guess* is confirmed. The cross-hatching means serpent-skin. Is this *always* so? We must examine other plates to decide.

The same ornament is found in Plates IX, XIV, XVI, XVIII, XIX, XX, XXI, XXXV (of STEPHENS'), but its situation does not allow us to gain any additional light.

In Plate XII (STEPHENS') none of the ornaments below the belt will help us. At the level of the mouth are four patches of it. Take the upper right-hand one of these. Immediately to its right is a serpent's head; below the curve and above the frog's (?) head are the rattles. Here is another confirmation. In Plate XVIII I refer the cross-hatching to the jaw of the crocodile. In Plate XXII I have numbered the *chiffres* as follows:

4201	4202	4203	4204.
4211	4212	4213	4214.
*	*	*	*
*	*	*	*
*	*	*	*
4311	4312	4313	4314.

4204 has the cross-hatching at its top, and to its left in 4203 is the serpent's head. The same is true in 4233–4. In 4264 we have the same symbol that we are trying to interpret; it is in its perfect form here and in No. 1865 of the Palenque series. In the caryatides of Plate XXIV (Fig. 60) the cross-hatching is included in the spots of the leopard's skin; in the ornaments at the base, in and near the masks which they are supporting, it is again serpent skin. Take the lower mask; its jaws, forked-tongue, and teeth prove it to be a serpent-mask, as well as the ornament just above it. In Plate LX (Fig. 59) it is to be noticed that the leopard spots are not cross-hatched, but that this ornament is given at the lower end of the leopard robe, which ends moreover in a crotalus tongue marked with the sign of the jaw (near the top of this ornament) and of the rattles (near the bottom). This again confirms the theory of the rebus meaning of the cross-hatching. In Plate XXIV (Fig. 60) the cross-hatching on the leopard spots probably is meant to *add* the serpent attribute to the leopard symbol, and not simply to denote the latter.

Thus an examination of the *whole* of the material available, shows that the preceding half of the hieroglyph 2021 and its congeners is nothing

but the *rebus* for QUETZALCOATL, or rather for CUKULCAN, the Maya name for this god. BRASSEUR DE BOURBOURG, as quoted in BANCROFT'S *Native Races*, vol. ii, p. 699, foot note, says CUKULCAN, comes from *kuk* or *kukul*, a bird, which appears to be the same as the *quetzal*, and from *can*, serpent; so that CUKULCAN in Maya is the same as QUETZALCOATL in Aztec. It is to be noticed how checks on the accuracy of any deciphering of hieroglyphs occur at every point, if we will only use them.

The Maya equivalents of HUITZILOPOCHTLI and TLALOC are undoubtedly buried in the *chiffres* already deciphered, but we have no means of getting their names in Maya from the rebus of the *chiffres*.

In the cases of these two gods we got the *chiffre*, and the rebus is still to seek. In the case of *Quetzalcoatl* or CUKULCAN, the rebus was the means of getting the name; and if the names of this divinity had not been equivalent in the two tongues, our results would have led us to the (almost absurd) conclusion that a god of certain attributes was called by his Aztec name in the Maya nations.

Thus every correct conclusion confirms every former one and is a basis for subsequent progress. The results of this analysis are that the Maya god CUKULCAN is named in each one of the following *chiffres*, viz: Nos. 1009, 265, 2090, 2073, 2021, 3085, 2045, 3073, 3070, 3032, 1865, 265, 268 ?, 4291 ? 73 ?? I give the numbers in the order in which they are arranged in the card-catalogue. There is, of course, a reason for this order.

BANCROFT, vol. iii, p. 268, says of QUETZALCOATL that "his symbols were the bird, the serpent, the cross, and the flint, representing the clouds, the lightning, the four winds, and the thunderbolt."

We shall find all of his titles except one, the bird, in what follows. We must notice here that in the *chiffre* 2021 and its congeners the bird appears directly over the head of CUKULCAN. It is plainly shown in the heliotype which accompanies Professor RAU'S work on the Palenque cross, though not so well in our Fig. 48.

In what has gone before, we have seen that the characters 2021, 2045, 2073, 3073, 3085, 265, etc., present the portrait and the rebus of CUKULCAN. It will not be forgotten that in the examination of the question as to the order in which the stone inscriptions were read we found a number of *pairs* in Plate LVI, Fig. 48; the characters 2021, etc., being one member of each. The other members of the pairs in the Plate LVI were 2020, 2044, 2072, 3072, 3084, etc. 264–265 is another example of the same pair elsewhere.

I hoped to find that the name CUKULCAN, or 2021, was associated in these pairs with some adjective or verb, and therefore examined the other members of the pair.

In a case like this the card-catalogue is of great assistance; for example, I wish to examine here the *chiffres* Nos. 2020, 2044, 2072, 3072, 3084, etc. In the catalogue their cards occur in the same compartment, arranged so that two cards that are exactly alike are contiguous.

We can often know that two *chiffres* are alike when one is in a far better state of preservation than the other. Hence we may select for study that one in which the lines and figures are best preserved; or from several characters known to be alike, and of which no one is entirely perfect, we may construct with accuracy the type upon which they were founded. In this case the hieroglyph 2020 is well preserved (see the right-hand side of Plate LVI, Fig. 48, the upper left-hand glyph). It consists of a *human hand*, with the symbol of the *sun* in it; above this is a sign similar to that of the Maya day *Ymix;* above this again, in miniature, is the rebus "snake plumage" or *Cukulcan;* and to the left of the hieroglyph are some curved lines not yet understood. No. 2003 of the same plate is also well preserved. It has the hand as in 2020, the rebus also, and the sign for *Ymix* is slightly different, being modified with a sign like the top of a cross, the symbol of the *four winds.* The symbol *Ymix* may be seen, by a reference to Plate XXVII (lower half) of the MS. *Troano*, to relate to the *rain.* The figure of that plate is pouring rain upon the earth from the orifices represented by *Ymix.* The cross of the *four winds* is still more plain in Nos. 2072, 3084, and 3072.

The part of this symbol 2020 and its synonyms which consists of curved lines occupying the left hand one-third of the whole *chiffre* occurs only in this set of characters, and thus I cannot say *certainly* what this particular part of the hieroglyph means; but if the reader will glance back over the last one hundred lines he will find that these *chiffres* contain the *rebus* CUKULCAN, the sign of a *human hand*, of the *sun*, of the *rain*, and of the *four winds.*

In BANCROFT'S *Native Races*, vol. iii, chapter vii, we find that the titles of QUETZALCOATL (CUKULCAN) were the *air*, the *rattlesnake*, the *rumbler* (in allusion to thunder), the *strong hand*, the lord of the *four winds.* The bird symbol exists in 2021, etc. Now in 2020 and its congeners we have found every one of these titles, save only that relating to the *thunder.* And we have found a meaning for every part of the hieroglyph 2020 save only one, viz, the left-hand one-third, consisting of concentric half ellipses or circles. It may be said to be quite *probable* that the unexplained part of the sign (2020) corresponds to the unused title, "the rumbler." But it is not rigorously proved, although very probable. The thunder would be well represented by repeating the sign for sky or heaven. This much seems to me certain. The sign is but another summing up of the attributes and titles of CUKULCAN. 2021 gave his portrait, his bird symbol, made allusion to his institution of the sacrifice of wounding the tongue, and spelled out his name in rebus characters. 2020 repeats his name as a rebus and adds the titles of lord of the four winds, of the sun, of rain, of the strong hand, etc. It is his biography, as it were.

In this connection, a passing reference to the characters 1810, etc., 1820, etc., 1830, etc., 1840, etc., 1850, etc., of the left-hand side of Plate LVI should be made. Among these, all the titles named above are to be found. These are suitable subjects for future study.

We now see *why* the pair 2020, 2021 occurs so many times in Plate LVI, and again as 264, 265, etc. The right-hand half of this tablet has much to say of CUKULCAN, and whenever his name is mentioned a brief list of his titles accompanies it. Although it is disappointing to find *both* members of this well-marked pair to be proper names, yet it is gratifying to see that the theory of pairs, on which the proof of the order in which the tablets are to be read must rest, has received such unexpected confirmation.

To conclude the search for the hieroglyphs of CUKULCAN'S name, it will be necessary to collect all those faces with "*round* beards" (see BANCROFT'S *Native Races*, vol. iii, p. 250). TLALOC was also bearded, but all the historians refer to QUETZALCOATL as above cited. I refer hieroglyphs Nos. 658, 651 ?, 650 ?, and 249 ? to this category.

Perhaps also the sign No. 153 is the sign of QUETZALCOATL, as something very similar to it is given as his sign in the *Codex Telleriano Remensis*, KINGSBOROUGH, vol. i, Plates I, II, and V (Plate I the best), where he wears it at his waist.

In Plate LXIII of STEPHENS (vol. ii) is a small figure of CUKULCAN which he calls "Bas Relief on Tablet." WALDECK gives a much larger drawing (incorrect, however, in many details), in which the figure, the "Beau Relief," is seen to wear bracelets high up on the arm. This was a distinguishing sign of QUETZALCOATL (see BANCROFT'S *Native Races*, vol. iii, pp. 249 and 250), and this figure probably is a representation of the Maya divinity. He is on a stool with tigers for supports. The tiger belongs to the attributes which he had in common with TLALOC, and we see again the intimate connection of these divinities—a connection often pointed out by BRASSEUR DE BOURBOURG.

This is the third proper name which has been deciphered. All of them have been pure picture-writing, except in so far as their rebus character may make them in a sense phonetic.

XI.

COMPARISON OF THE SIGNS OF THE MAYA MONTHS (LANDA) WITH THE TABLETS.

We have a set of signs for Maya months and days handed down to us by LANDA along with his phonetic alphabet. *A priori* these are more likely to represent the primitive forms as carved in stone than are the alphabetic hieroglyphs, which may well have been invented by the Spaniards to assist the natives to memorize religious formulæ.*

* Since this was written I have seen a paper by Dr. VALENTINI, "The LANDA alphabet a Spanish fabrication" (read before the American Antiquarian Society, April 28, 1880), and the conclusions of that paper seem to me to be undoubtedly correct. They are the same as those just given, but while my own were reached by a study of the stones and in the course of a general examination, Dr. VALENTINI has addressed himself successfully to the solution of a special problem.

BRASSEUR DE BOURBOURG has analyzed the signs for the day and month in his publication on the MS. *Troano*, and the strongest arguments which can be given for their phonetic origin are given by him.

I have made a set of MS. copies of these signs and included them in my card-catalogue, and have carefully compared them with the tablets XXIV and LVI. My results are as follows:

PLATE XXIV (our Fig. 60).

No. 42 is the Maya month *Pop*, beginning July 16.
No. 54 is *Zip*??, beginning August 25.
No. 47 is *Tzoz*??, beginning September 14.
No. 57 is *Tzec*?, beginning October 4.
No. 44-45 is *Mol*?, beginning December 3.
No. 39 is *Yax*, *Zac*, or *Ceh*, beginning January 12, February 1, February 21, respectively.

PLATE LVI (our Fig. 48).

No. 1804 is *Uo*????
No. 1901 is *Zip*????
No. 1816 is *Tzoz*??
No. 1814 is *Tzec*?
No. 1807 is *Mol*?
No. 1855 is *Yax*, *Zac*, or *Ceh*.
No. 1844 is *Mac*?

The only sign about which there is little or no doubt is No. 42, which seems pretty certainly to be the sign of the Maya month *Pop*, which began July 16.

No. 39, just above it, seems also to be *one* of the months *Yax*, *Zac*, or *Ceh*, which began on January 12, February 1, and February 21, respectively. Which one of these it corresponds to must be settled by other means than a direct comparison. The signs given by LANDA for these three months all contain the same radical as No. 39, but it is impossible to decide with entire certainty to which it corresponds. It, however, most nearly resembles the sign for *Zac* (February 1); and it is noteworthy that it was precisely in this month that the greatest feast of TLALOC took place,* and its presence in this tablet, which relates to *Tlaloc*, is especially interesting.

In connection with the counting of time, a reference to the bottom part of the *chiffre* 3000 of the Palenque cross tablet should be made. This is a *knot* tied up in a string or scarf; and we know this to have been the method of expressing the expiration and completion of a cycle of years. It occurs just above the symbol 3010, the *chiffre* for a metal.

An examination of the original stone in the National Museum, Washington, which is now in progress, has already convinced me that the methods which I have described in the preceding pages promise other interesting confirmations of the results I have reached. For the time,

* See BRASSEUR DE BOURBOURG, *Histoire du Mexique*, vol. i, p. 328.

I must leave the matter in its present state. I think I am justified in my confidence that suitable methods of procedure have been laid down, and that certain important results have already been reached.

I do not believe that the conclusions stated will be changed, but I am confident that a rich reward will be found by any competent person who will continue the study of these stones. The proper names now known will serve as points of departure, and it is probable that some research will give us the signs for verbs or adjectives connected with them.

It is an immense step to have rid ourselves of the phonetic or alphabetic idea, and to have found the manner in which the Maya mind represented attributes and ideas. Their method was that of all nations at the origin of written language; that is, pure picture-writing. At Copan this is found in its earliest state; at Palenque it was already highly conventionalized. The step from the Palenque character to that used in the Kabah inscription is apparently not greater than the step from the latter to the various manuscripts. An important research would be the application of the methods so ably applied by Dr. ALLEN to tracing the evolution of the latter characters from their earlier forms. In this way it will be possible to extend our present knowledge materially.

SMITHSONIAN INSTITUTION—BUREAU OF ETHNOLOGY.
J. W. POWELL, DIRECTOR.

CESSIONS OF LAND BY INDIAN TRIBES

TO THE

UNITED STATES:

ILLUSTRATED BY THOSE IN THE STATE OF INDIANA.

BY

C. C. ROYCE.

SMITHSONIAN INSTITUTION - BUREAU OF ETHNOLOGY
J. W. POWELL, DIRECTOR
MAP
OF THE
STATE OF INDIANA
Exhibiting the Lands ceded by the
Indian Tribes
TO THE
UNITED STATES.
MICHIGAN
ILLINOIS
OHIO
KENTUCKY
CHICAGO
INDIANAPOLIS
LOUISVILLE
SECOND PRINCIPAL MERIDIAN
FIRST PRINCIPAL MERIDIAN
BASE LINE
CLARK'S GRANT

CESSIONS OF LAND BY INDIAN TRIBES TO THE UNITED STATES: ILLUSTRATED BY THOSE IN THE STATE OF INDIANA.

By C. C. Royce.

CHARACTER OF THE INDIAN TITLE.

The social and political relations that have existed and still continue between the Government of the United States and the several Indian tribes occupying territory within its geographical limits are, in many respects, peculiar.

The unprecedentedly rapid increase and expansion of the white population of the country, bringing into action corresponding necessities for the acquisition and subjection of additional terrritory, have maintained a constant struggle between civilization and barbarism. Involved as a factor in this social conflict, was the legal title to the land occupied by Indians. The questions raised were whether in law or equity the Indians were vested with any stronger title than that of mere tenants at will, subject to be dispossessed at the pleasure or convenience of their more civilized white neighbors, and, if so, what was the nature and extent of such stronger title?

These questions have been discussed and adjudicated from time to time by the executive and judicial authorities of civilized nations ever since the discovery of America.

The discovery of this continent, with its supposed marvelous wealth of precious metals and commercial woods, gave fresh impetus to the ambition and cupidity of European monarchs.

Spain, France, Holland, and England each sought to rival the other in the magnitude and value of their discoveries. As the primary object of each of these European potentates was the same, and it was likely to lead to much conflict of jurisdiction, the necessity of some general rule became apparent, whereby their respective claims might be acknowledged and adjudicated without resort to the arbitrament of arms. Out of this necessity grew the rule which became a part of the recognized law of nations, and which gave the preference of title to the monarch whose vessels should be the first to discover, rather than to the one who should first enter upon the possession of new lands. The exclusion under this rule of all other claimants gave to the discovering nation the sole right of acquiring the soil from the natives and of planting settlements thereon. This was a right asserted by all the commercial nations of Europe, and fully recognized in their dealings with each

other; and the assertion of such a right necessarily carried with it a modified denial of the Indian title to the land discovered. It recognized in them nothing but a possessory title, involving a right of occupancy and enjoyment until such time as the European sovereign should purchase it from them. The ultimate fee was held to reside in such sovereign, whereby the natives were inhibited from alienating in any manner their right of possession to any but that sovereign or his subjects.

The recognition of these principles seems to have been complete, as is evidenced by the history of America from its discovery to the present day. France, England, Portugal, and Holland recognized them unqualifiedly, and even Catholic Spain did not predicate her title solely upon the grant of the Holy See.

No one of these countries was more zealous in her maintenance of these doctrines than England. In 1496 King Henry VII commissioned John and Sebastian Cabot to proceed upon a voyage of discovery and to take possession of such countries as they might find which were then unknown to Christian people, in the name of the King of England. The results of their voyages in the next and succeeding years laid the foundation for the claim of England to the territory of that portion of North America which subsequently formed the nucleus of our present possessions.

The policy of the United States since the adoption of the Federal Constitution has in this particular followed the precedent established by the mother country. In the treaty of peace between Great Britain and the United States following the Revolutionary war, the former not only relinquished the right of government, but renounced and yielded to the United States all pretensions and claims whatsoever to all the country south and west of the great northern rivers and lakes as far as the Mississippi.

In the period between the conclusion of this treaty and the year 1789 it was undoubtedly the opinion of Congress that the relinquishment of territory thus made by Great Britain, without so much as a saving clause guaranteeing the Indian right of occupancy, carried with it an absolute and unqualified fee-simple title unembarrassed by any intermediate estate or tenancy. In the treaties held with the Indians during this period—notably those of Fort Stanwix, with the Six Nations, in 1784, and Fort Finney, with the Shawnees, in 1786—they had been required to acknowledge the United States as the sole and absolute sovereign of all the territory ceded by Great Britain.

This claim, though unintelligible to the savages in its legal aspects, was practically understood by them to be fatal to their independence and territorial rights. Although in a certain degree the border tribes had been defeated in their conflicts with the United States, they still retained sufficient strength and resources to render them formidable antagonists, especially when the numbers and disposition of their

adjoining and more remote allies were taken into consideration. The breadth and boldness of the territorial claims thus asserted by the United States were not long in producing their natural effect. The active and sagacious Brant succeeded in reviving his favorite project of an alliance between the Six Nations and the northwestern tribes. He experienced but little trouble in convening a formidable assemblage of Indians at Huron Village, opposite Detroit, where they held council together from November 28 to December 18, 1786.

These councils resulted in the presentation of an address to Congress, wherein they expressed an earnest desire for peace, but firmly insisted that all treaties carried on with the United States should be with the general voice of the whole confederacy in the most open manner; that the United States should prevent surveyors and others from crossing the Ohio River; and they proposed a general treaty early in the spring of 1787. This address purported to represent the Five Nations, Hurons, Ottawas, Twichtwees, Shawanese, Chippewas, Cherokees, Delawares, Pottawatomies, and the Wabash Confederates, and was signed with the totem of each tribe.

Such a remonstrance, considering the weakness of the government under the old Articles of Confederation, and the exhausted condition immediately following the Revolution, produced a profound sensation in Congress. That body passed an act providing for the negotiation of a treaty or treaties, and making an appropriation for the purchase and extinguishment of the Indian claim to certain lands. These preparations and appropriations resulted in two treaties made at Fort Harmar, January 9, 1789, one with the Six Nations, and the other with the Wiandot, Delaware, Ottawa, Chippewa, Pottawatima, and Sac Nations, wherein the Indian title of occupancy is clearly acknowledged. That the government so understood and recognized this principle as entering into the text of those treaties is evidenced by a communication bearing date June 15, 1789, from General Knox, then Secretary of War, to President Washington, and which was communicated by the latter on the same day to Congress, in which it is declared that—

> The Indians, being the prior occupants, possess the right of soil. It cannot be taken from them unless by their free consent, or by right of conquest in case of a just war. To dispossess them on any other principle would be a gross violation of the fundamental laws of nature, and of that distributive justice which is the glory of a nation.

The principle thus outlined and approved by the administration of President Washington, although more than once questioned by interested parties, has almost, if not quite, invariably been sustained by the legal tribunals of the country, at least by the courts of final resort; and the decisions of the Supreme Court of the United States bear consistent testimony to its legal soundness. Several times has this question in different forms appeared before the latter tribunal for adjudication, and in each case has the Indian right been recognized and protected. In 1823, 1831, and 1832, Chief Justice Marshall successively delivered

the opinion of the court in important cases involving the Indian status and rights. In the second of these cases (The Cherokee Nation *vs.* The State of Georgia) it was maintained that the Cherokees were a state and had uniformly been treated as such since the settlement of the country; that the numerous treaties made with them by the United States recognized them as a people capable of maintaining the relations of peace and war; of being responsible in their political character for any violation of their engagements, or for any aggression committed on the citizens of the United States by any individual of their community; that the condition of the Indians in their relations to the United States is perhaps unlike that of any other two peoples on the globe; that, in general, nations not owing a common allegiance are foreign to each other, but that the relation of the Indians to the United States is marked by peculiar and cardinal distinctions which exist nowhere else; that the Indians were acknowledged to have an unquestionable right to the lands they occupied until that right should be extinguished by a voluntary cession to our government; that it might well be doubted whether those tribes which reside within the acknowledged boundaries of the United States could with strict accuracy be denominated foreign nations, but that they might more correctly perhaps be denominated domestic dependent nations; that they occupied a territory to which we asserted a title independent of their will, but which only took effect in point of possession when their right of possession ceased.

The Government of the United States having thus been committed in all of its departments to the recognition of the principle of the Indian right of possession, it becomes not only a subject of interest to the student of history, but of practical value to the official records of the government, that a carefully compiled work should exhibit the boundaries of the several tracts of country which have been acquired from time to time, within the present limits of the United States, by cession or relinquishment from the various Indian tribes, either through the medium of friendly negotiations and just compensation, or as the result of military conquest. Such a work, if accurate, would form the basis of any complete history of the Indian tribes in their relations to, and influence upon the growth and diffusion of our population and civilization. Such a contribution to the historical collections of the country should comprise:

1st. A series of maps of the several States and Territories, on a scale ranging from ten to sixteen miles to an inch, grouped in atlas form, upon which should be delineated in colors the boundary lines of the various tracts of country ceded to the United States from time to time by the different Indian tribes.

2d. An accompanying historical text, not only reciting the substance of the material provisions of the several treaties, but giving a history of the causes leading to them, as exhibited in contemporaneous official correspondence and other trustworthy data.

3d. A chronologic list of treaties with the various Indian tribes, exhibiting the names of tribes, the date, place where, and person by whom negotiated.

4th. An alphabetic list of all rivers, lakes, mountains, villages, and other objects or places mentioned in such treaties, together with their location and the names by which they are at present known.

5th. An alphabetic list of the principal rivers, lakes, mountains, and other topographic features in the United States, showing not only their present names but also the various names by which they have from time to time been known since the discovery of America, giving in each case the date and the authority therefor.

INDIAN BOUNDARIES.

The most difficult and laborious feature of the work is that involved under the first of these five subdivisions. The ordinary reader in following the treaty provisions, in which the boundaries of the various cessions are so specifically and minutely laid down, would anticipate but little difficulty in tracing those boundaries upon the modern map. In this he would find himself sadly at fault. In nearly all of the treaties concluded half a century or more ago, wherein cessions of land were made, occur the names of boundary points which are not to be found on any modern map, and which have never been known to people of the present generation living in the vicinity.

In many of the older treaties this is the case with a large proportion of the boundary points mentioned. The identification and exact location of these points thus becomes at once a source of much laborious research. Not unfrequently weeks and even months of time have been consumed, thousands of old maps and many volumes of books examined, and a voluminous correspondence conducted with local historical societies or old settlers, in the effort to ascertain the location of a single boundary point.

To illustrate this difficulty, the case of "Hawkins' line" may be cited, a boundary line mentioned in the cession by the Cherokees by treaty of October 2, 1798. An examination of more than four thousand old and modern maps and the scanning of more than fifty volumes failed to show its location or to give even the slightest clue to it. A somewhat extended correspondence with numerous persons in Tennessee, including the veteran annalist, Ramsey, also failed to secure the desired information. It was not until months of time had been consumed and probable sources of information had been almost completely exhausted that, through the persevering inquiries of Hon. John M. Lea, of Nashville, Tenn., in conjunction with the present writer's own investigations, the line was satisfactorily identified as being the boundary line mentioned in

the Cherokee treaty of July 2, 1791, and described as extending from the North Carolina boundary "north to a point from which a line is to be extended to the river Clinch that shall pass the Holston at the ridge which divides the waters running into Little River from those running into the Tennessee."

It gained the title of "Hawkins' line" from the fact that a man named Hawkins surveyed it.

That this is not an isolated case, and as an illustration of the number and frequency of changes in local geographical names in this country, it may be remarked that in twenty treaties concluded by the Federal Government with the various Indian tribes prior to the year 1800, in an aggregate of one hundred and twenty objects and places therein recited, seventy-three of them are wholly ignored in the latest edition of Colton's Atlas; and this proportion will hold with but little diminution in the treaties negotiated during the twenty years immediately succeeding that date.

Another and most perplexing question has been the adjustment of the conflicting claims of different tribes of Indians to the same territory. In the earlier days of the Federal period, when the entire country west of the Alleghanies was occupied or controlled by numerous contiguous tribes, whose methods of subsistence involved more or less of nomadic habit, and who possessed large tracts of country then of no greater value than merely to supply the immediate physical wants of the hunter and fisherman, it was not essential to such tribes that a careful line of demarkation should define the limits of their respective territorial claims and jurisdiction. When, however, by reason of treaty negotiations with the United States, with a view to the sale to the latter of a specific area of territory within clearly-defined boundaries, it became essential for the tribe with whom the treaty was being negotiated to make assertion and exhibit satisfactory proof of its possessory title to the country it proposed to sell, much controversy often arose with other adjoining tribes, who claimed all or a portion of the proposed cession. These conflicting claims were sometimes based upon ancient and immemorial occupancy, sometimes upon early or more recent conquest, and sometimes upon a sort of wholesale squatter-sovereignty title whereby a whole tribe, in the course of a sudden and perhaps forced migration, would settle down upon an unoccupied portion of the territory of some less numerous tribe, and by sheer intimidation maintain such occupancy.

In its various purchases from the Indians, the Government of the United States, in seeking to quiet these conflicting territorial claims, have not unfrequently been compelled to accept from two, and even three, different tribes separate relinquishments of their respective rights, titles, and claims to the same section of country. Under such circumstances it can readily be seen what difficulties would attend a clear exhibition upon a single map of these various coincident and overlapping strips of territory. The State of Illinois affords an excellent illustration.

The conflicting cessions in that State may be briefly enumerated as follows:

1. The cession at the mouth of Chicago River, by treaty of August 3, 1795, was also included within the limits of a subsequent cession made by treaty of August 24, 1816, with the Ottawas, Chippewas, and Pottawatomies.

2. The cession at the mouth of the Illinois River, by treaty of 1795, was overlapped by the Kaskaskia cession of 1803, again by the Sac and Fox cession of 1804, and a third time by the Kickapoo cession of 1819.

3. The cession at "Old Peoria Fort, or village," by treaty of 1795, was also overlapped in like manner with the last preceding one.

4. The cessions of 1795 at Fort Massac and at Great Salt Spring are within the subsequent cession by the Kaskaskias of 1803.

5. The cession of August 13, 1803, by the Kaskaskias, as ratified and enlarged by the Kaskaskias and Peorias September 25, 1818, overlaps the several sessions by previous treaty of 1795 at the mouth of the Illinois River, at Great Salt Spring, at Fort Massac, and at Old Peoria Fort, and is in turn overlapped by subsequent cessions of July 30, and August 30, 1819, by the Kickapoos and by the Pottawatomie cession of October 20, 1832.

6. The Sac and Fox cession of November 3, 1804 (partly in Missouri and Wisconsin) overlaps the cessions of 1795 at the mouth of the Illinois River and at Old Peoria Fort. It is overlapped by two Chippewa, Ottawa, and Pottawatomie cessions of July 29, 1829, the Winnebago cessions of August 1, 1829, and September 15, 1832, and by the Chippewa, Ottawa, and Pottawatomie cession of September 26, 1833.

7. The Piankeshaw cession of December 30, 1805, is overlapped by the Kickapoo cession of 1819.

8. The Ottawa, Chippewa, and Pottawatomie cession of August 24, 1816, overlaps the cession of 1795 around Chicago.

9. The cession of October 2, 1818, by the Pottawatomies (partly in Indiana), is overlapped by the subsequent cession of 1819, by the Kickapoos.

10. The combined cessions of July 30, and August 30, 1819, by the Kickapoos (partly in Indiana), overlap the cessions of 1795 at the mouth of the Illinois River and at Old Fort Peoria; also the Kaskaskia and Peoria cessions of 1803 and 1818, the Piankeshaw cession of 1805, and the Pottawatomie cession of October 2, 1818, and are overlapped by the subsequent Pottawatomie cession of October 20, 1832.

11. Two cessions were made by the Chippewas, Ottawas and Pottawatomies by treaty of July 29, 1829 (partly located in Wisconsin), one of which is entirely and the other largely within the limits of the country previously ceded by the Sacs and Foxes, November 3, 1804.

12. The Winnebago cession of August 1, 1829 (which is partly in Wisconsin), is also wholly within the limits of the aforesaid Sac and Fox cession of 1804.

13. Cession by the Winnebagoes September 15, 1832, which is mostly in the State of Wisconsin and which was also within the limits of the Sac and Fox cession of 1804.

14. Pottawatomie cession of October 20, 1832, which overlaps the Kaskaskia and Peoria cession of August 13, 1803, as confirmed and enlarged September 25, 1818, and also the Kickapoo cession by treaties of July 30 and August 30, 1819.

From this it will be seen that almost the entire country comprising the present State of Illinois was the subject of controversy in the matter of original ownership, and that the United States, in order fully to extinguish the Indian claim thereto, actually bought it twice, and some portions of it three times. It is proper, however, to add in this connection that where the government at the date of a purchase from one tribe was aware of an existing claim to the same region by another tribe, it had the effect of diminishing the price paid.

ORIGINAL AND SECONDARY CESSIONS.

Another difficulty that has arisen, and one which, in order to avoid confusion, will necessitate the duplication in the atlas of the maps of several States, is the attempt to show not only original, but also secondary cessions of land. The policy followed by the United States for many years in negotiating treaties with the tribes east of the Mississippi River included the purchase of their former possessions and their removal west of that river to reservations set apart for them within the limits of country purchased for that purpose from its original owners, and which were in turn retroceded to the United States by its secondary owners. This has been largely the case in Missouri, Arkansas, Kansas, Nebraska, and Indian Territory. The present State of Kansas, for instance, was for the most part the inheritance of the Kansas and Osage tribes. It was purchased from them by the provisions of the treaties of June 2, 1825, with the Osage, and June 3, 1825, with the Kansas tribe, they, however, reserving in each case a tract sufficiently large for their own use and occupancy. These and subsequent cessions of these two tribes must be shown upon a map of "original cessions."

After securing these large concessions from the Kansas and Osages, the government, in pursuance of the policy above alluded to, sought to secure the removal of the remnant of Ohio, Indiana, and Illinois tribes to this region by granting them, in part consideration for their eastern possessions, reservations therein of size and location suitable to their wishes and necessities. In this way homes were provided for the Wyandots, Delawares, Shawnees, Pottawatomies, Sacs and Foxes of the Mississippi, Kickapoos, the Confederated Kaskaskias, Peorias, Pianke-

shaws, and Weas, the Ottawas of Blanchard's Fork and Roche de Bœuf, and the Chippewas and Munsees. A few years of occupation again found the advancing white settlements encroaching upon their domain, with the usual accompanying demand for more land. Cessions, first of a portion and finally of the remnant, of these reservations followed, coupled with the removal of the Indians to Indian Territory. These several reservations and cessions must be indicated upon a map of "secondary cessions."

Object illustration is much more striking and effective than mere verbal description. In order, therefore, to secure to the reader the clearest possible understanding of the subject, there is herewith presented as an illustration a map of the State of Indiana, upon which is delineated the boundaries of the different tracts of land within that State ceded to the United States from time to time by treaty with the various Indian tribes.

These cessions are as follows:

No. 1. A tract lying east of a line running from opposite the mouth of Kentucky River, in a northerly direction, to Fort Recovery, in Ohio, and which forms a small portion of the western end of the cession made by the first paragraph of article 3, treaty of August 3, 1795, with the Wyandots, Delawares, Miamis, and nine other tribes. Its boundaries are indicated by scarlet lines. The bulk of the cession is in Ohio.

No. 2. Six miles square at confluence of Saint Mary's and Saint Joseph's Rivers, including Fort Wayne; also ceded by treaty of August 3, 1795, and bounded on the map by scarlet lines.

No. 3. Two miles square on the Wabash, at the end of the Portage of the Miami of the Lake; also ceded by treaty of August 3, 1795, and bounded on the map by scarlet lines.

No. 4. Six miles square at Ouatenon, or Old Wea Towns, on the Wabash; also ceded by treaty of August 3, 1795, and bounded on the map by scarlet lines. This tract was subsequently retroceded to the Indians by article 8, treaty of September 30, 1809, and finally included within the Pottawatomie cession of October 2, 1818, and the Miami cession of October 6, 1818.

No. 5. Clarke's grant on the Ohio River; stipulated in deed from Virginia to the United States in 1784 to be granted to General George Rogers Clarke and his soldiers. This tract was specially excepted from the limits of the Indian country by treaty of August 3, 1795, and is bounded on the map by scarlet lines.

No. 6. "Post of Vincennes and adjacent country, to which the Indian title has been extinguished." This tract was specially excluded from the limits of the Indian country by treaty of August 3, 1795. Doubt having arisen as to its proper boundaries, they were specifially defined by treaty of June 7, 1803. It is known as the "Vincennes tract"; is partly in Illinois, and is bounded on the map by scarlet lines.

No. 7. Tract ceded by the treaties of August 18, 1804, with the Dela-

wares, and August 27, 1804, with the Piankeshaws. In the southern part of the State, and bounded on the map by green lines.

No. 8. Cession by the treaty of August 21, 1805, with the Miamis, Eel Rivers, and Weas, in the southeastern part of the State, and designated by blue lines.

No. 9. Cession by treaty of September 30, 1809, with the Miami, Eel River, Delaware, and Pottawatomie tribes, adjoining "Vincennes tract" (No. 9) on the north, and designated by yellow lines. This cession was concurred in by the Weas in the treaty of October 26, 1809.

No. 10. Cession by the same treaty of September 30, 1809; in the southeastern portion of the State; bounded on the map by yellow lines.

No. 11. Cession also by the treaty of September 30, 1809; marked by crimson lines, and partly in Illinois. This cession was conditional upon the consent of the Kickapoos, which was obtained by the treaty with them of December 9, 1809.

No. 12. Cession by the Kickapoos, December 9, 1809, which was subsequently reaffirmed by them June 4, 1816. It was also assented to by the Weas October 2, 1818, and by the Miamis October 6, 1818. It is partly in Illinois, and is bounded on the map by green lines. The Kickapoos also assented to the cession No. 11 by the Miamis *et al.*, of September 30, 1809.

No. 13. Cession by the Wyandots, September 29, 1817. This is mostly in Ohio, and is bounded on the map by yellow lines.

No. 14. Cession by the Pottawatomies, October 2, 1818; partly in Illinois, and is denoted by brown lines. A subsequent treaty of August 30, 1819, with the Kickapoos, cedes a tract of country (No. 16) which overlaps this cession, the overlap being indicated by a dotted blue line.

By the treaty of October 2, 1818, the Weas ceded all the land claimed by them in Ohio, Indiana, and Illinois, except a small reserve on the Wabash River. Their claim was of a general and indefinite character, and is fully covered by more definite cessions by other tribes.

By the treaty of October 3, 1818, the Delawares ceded all their claim to land in Indiana. This claim, which they held in joint tenancy with the Miamis, was located on the waters of White River, and it is included within the tract marked 15, ceded by the Miamis October 6, 1818.

No. 15. Cession by the Miamis, October 6, 1818; bounded on the map by purple lines. Its general boundaries cover all of Central Indiana and a small portion of Western Ohio, but within its limits were included the Wea Reservation of 1818 (No. 17), and six tracts of different dimensions were reserved for the future use of the Miamis [Nos. 21, 29 (30 and 50), (31, 48, 53, and 54), 49, and 51]. The Miamis also assented to the Kickapoo cession of December 9, 1809 (No. 12). The Kickapoos in turn, by treaty of July 30, 1819, relinquished all claim to country southeast of the Wabash, which was an indefinite tract, and is covered by the foregoing Miami cession of 1818.

No. 16. Cession by the Kickapoos, August 30, 1819. This cession is

bounded on the map by blue lines, and is largely in Illinois. It overlaps the Pottawatomie cession of October 2, 1818 (No. 14), the overlap being indicated by a dotted blue line. It is in turn overlapped by the Pottawatomie cession (No. 23) of October 26, 1832.

No. 17. Cession by the Weas, August 11, 1820, of the tract reserved by them October 2, 1818. It is on the Wabash River, in the western part of the State, and is indicated by blue lines. It is within the general limits of the Miami cession (No. 15) of October 6, 1818.

No. 18. Cession of August 29, 1821, by the Ottowas, Chippewas, and Pottawatomies, indicated by green lines, and mostly in Michigan.

No. 19. Cession by the Pottawatomies, by first clause of first article of the treaty of October 16, 1826. It lies north of Wabash River, and is bounded on the map by blue lines. This and an indefinite extent of adjoining country was also claimed by the Miamis, who ceded their claim thereto October 23, 1826, with the exception of sundry small reservations, four of which [Nos. 26, 27, 32, and 52] were partially or entirely within the general limits of the Pottawatomie.

No. 20. Cession by the last clause of the first article of the Pottawatomie treaty of October 16, 1826; in the northwest corner of the State, and bounded on the map by scarlet lines.

As above stated, the Miamis, by treaty of October 23, 1826, ceded all their claim to land in Indiana lying north and west of the Wabash and Miami (Maumee) Rivers, except six small tribal, and a number of individual reserves and grants. These six tribal, reserves were numbers 25, 27, 32, 52, 25, and 28, the first four of which, as above remarked, were either partially or entirely within the Pottawatomie cession by the first clause of the first article of the treaty of October 16, 1826, and the other two within the Pottawatomie cession of October 27, 1832.

No. 21. Cession by the Eel River Miamis, February 11, 1828, bounded on the map by green lines. This tract is within the general limits of the Miami cession (No. 15) of 1818, and was reserved therefrom.

No. 22. Cession by the second clause of the first article of the Pottawatomie treaty of September 20, 1828, designated by brown lines.

No. 23. Cession by the Pottawatomies, October 26, 1832, is in the northwest portion of the State, and is indicated by yellow lines. Near the southwest corner it overlaps the Kickapoo cession (No. 16) of August 30, 1819. Within the general limits of this cession seven tracts were reserved for different bands of the tribe, which will be found on the map numbered as follows: 33, 34, 39, 40 (two reserves), 41, and 42.

No. 24. Cession by the Pottawatomies of Indiana and Michigan, October 27, 1832, which in terms is a relinquishment of their claim to any remaining lands in the States of Indiana and Illinois, and in the Territory of Michigan south of Grand River. The cession thus made in Indiana is bounded on the map by scarlet lines. Within the general limits of this cession, however, they reserved for the use of various bands of the tribe eleven tracts of different areas, and which are numbered as follows: 35, 36, 37, 38, 43(two reserves), 44 (two reserves), 45, 46, and 47.

Nos. 25 to 32, inclusive. Cession of October 23, 1834, by the Miamis, of eight small tracts previously reserved to them, all bounded on the map by green lines. These are located as follows:

No. 25. Tract of thirty-six sections at Flat Belly's village, reserved by treaty of 1826; in townships 33 and 34 north, ranges 7 and 8 east.

No. 26. Tract of five miles in length on the Wabash, extending back to Eel River, reserved by treaty of 1826; in townships 27 and 28 north, ranges 4 and 5 east.

No. 27. Tract of ten sections at Raccoon's Village, reserved by the treaty of 1826; in townships 29 and 30 north, ranges 10 and 11 east.

No. 28. Tract of ten sections on Mud Creek, reserved by the treaty of 1826; in township 28 north, range 4 east. The treaty of October 27, 1832, with the Pottawatomies, established a reserve of sixteen sections for the bands of Ash-kum and Wee-si-o-nas (No. 46), and one of five sections for the band of Wee-sau (No. 47), which overlapped and included nearly all the territory comprised in the Mud Creek reserve.

No. 29. Tract of two miles square on Salamanie River, at the mouth of At-che-pong-quawe Creek, reserved by the treaty of 1818; in township 23 north, ranges 13 and 14 east.

No. 30. A portion of the tract opposite the mouth of Aboutte River, reserved by the treaty of 1818; in townships 29 and 30 north, ranges 10, 11, and 12 east.

No. 31. A portion of the tract known as the "Big Reserve," established by the treaty of 1818; in townships 21 to 27, inclusive, ranges 1 and 2 east.

No. 32. Tract of ten sections at the Forks of the Wabash, reserved by the treaty of 1826. This cession provides for the relinquishment of the Indian title and the issuance of a patent to John B. Richardville therefor. In township 28 north, ranges 8 and 9 east.

No. 33. Cession of December 4, 1834, by Com-o-za's band of Pottawatomies, of a tract of two sections reserved for them on the Tippecanoe River by the treaty of October 26, 1832.

No. 34. Cession of December 10, 1834, by Mau-ke-kose's (Muck-rose) band of Pottawatomies, of six sections reserved to them by the treaty of October 26, 1832; in township 32 north, range 2 east, and bounded on the map by crimson lines.

No. 35. Cession of December 16, 1834, by the Pottawatomies, of two sections reserved by the treaty of October 27, 1832, to include their mills on the Tippecanoe River.

No. 36. Cession of December 17, 1834, by Mota's band of Pottawatomies, of four sections reserved for them by the treaty of October 27, 1832; in townships 32 and 33 north, range 5 east, indicated by blue lines.

No. 37. Cession of March 26, 1836, by Mes-quaw-buck's band of Pottawatomies, of four sections reserved to them by the treaty of October 27, 1832; in township 33 north, range 6 east, indicated by crimson lines.

No. 38. Cession of March 29, 1836, by Che-case's band of Pottawatomies, of four sections reserved for them by the treaty of October 27, 1832; in townships 32 and 33 north, ranges 5 and 6 east, bounded on the map by yellow lines.

No. 39. Cession of April 11, 1836, by Aub-ba-naub-bee's band of Pottawatomies, of thirty-six sections reserved for them by the treaty of October 26, 1832. In townships 31 and 32 north, ranges 1 and 2 east, bounded on the map by blue lines.

No. 40. Cession of April 22, 1836, by the bands of O-kaw-mause, Kee-waw-nee, Nee-boash, and Ma-che-saw (Mat-chis-jaw), of ten sections reserved to them by the Pottawatomie treaty of October 26, 1832.

No. 41. Cession of April 22, 1836, by the bands of Nas-waw-kee (Nees-waugh-gee) and Quash-quaw, of three sections reserved for them by the treaty of October 26, 1832; in township 32 north, range 1 east, bounded on the map by scarlet lines.

No. 42. Cession of August 5, 1836, by the bands of Pee-pin-ah-waw, Mack-kah-tah-mo-may, and No-taw-kah (Pottawatomies), of twenty-two sections reserved for them and the band of Menom-i-nee (the latter of which does not seem to be mentioned in the treaty of cession), by treaty of October 26, 1832; in township 33 north, ranges 1 and 2 east, bounded on the map by green lines.

No. 43. Cession of September 20, 1836, by the bands of To-i-sas brother Me-mot-way, and Che-quaw-ka-ko, of ten sections reserved for them by the Pottawatomie treaty of October 27, 1832, and cession of September 22, 1836, by Ma-sac's band of Pottawatomies, of four sections reserved for them by the treaty of October 27, 1832; in township 31 north, range 3 east, bounded on the map by crimson lines.

Nos. 44 to 47, inclusive. Cessions of September 23, 1836, by various bands of Pottawatomies, of lands reserved for them by the treaty of 1832 (being all of their remaining lands in Indiana), as follows:

No. 44. Four sections each for the bands of Kin-kash and Men-o-quet; in township 33 north, ranges 5 and 6 east, bounded on the map by crimson lines.

No. 45. Ten sections for the band of Che-chaw-kose; in township 32 north, range 4 east, designated by scarlet lines.

No. 46. Sixteen sections for the bands of Ash-kum and Wee-si-o-nas; in townships 28 and 29 north, range 4 east, bounded on the map by a dotted black line, and overlapping No. 28.

No. 47. Five sections for the band of Wee-sau; in township 28 north, range 4 east, adjoining No. 46, bounded on the map by a dotted black line, and overlapping Nos. 19 and 28.

A cession for the second time is also made by this treaty of the four sections reserved for the band of Mota (No. 35), by the treaty of October 27, 1832.

Nos. 48 to 52, inclusive. Cessions of November 6, 1838, by the Miamis, as follows:

No. 48. A portion of the "Big Reserve," in townships 25, 26, and

27 north, ranges 2, 3, 4, 5, 6, and 7 east, bounded on the map by crimson lines, within the limits of which is reserved a tract for the band of Me-to-sin-ia, numbered 54.

No. 49. The reservation by the treaty of 1818, on the Wabash River, below the forks thereof; in townships 27 and 28 north, ranges 8 and 9 east, bounded on the map by scarlet lines.

No. 50. The remainder of the tract reserved by the treaty of 1818, opposite the mouth of Abouette River; in townships 28 and 29 north, ranges 10, 11, and 12 east, denoted by crimson lines.

No. 51. The reserve by the treaty of 1818 at the mouth of Flat Rock Creek; in township 27 north, ranges 10 and 11 east, bounded on the map by crimson lines.

No. 52. The reserve at Seek's Village by the treaty of 1826; in townships 31 and 32 north, ranges 9 and 10 east, marked by yellow lines.

No. 53. Cession of November 28, 1840, of the residue of the "Big Reserve" (except the grant to Me-to-sin-ia's band No. 54); in townships 21 to 26 north, ranges 2 to 7 east, designated by yellow lines.

No. 54. By the Miami treaty of November 6, 1838, a reserve of ten miles square was made (out of the general cession) for the band of Me-to-sin-ia. By the treaty of November 28, 1840, the United States agreed to convey this tract to Me-shing-go-me-sia, son of Me-to-sin-ia, in trust for the band.

By act of Congress approved June 10, 1872, this reserve was partitioned among the members of the band, 63 in number, and patents issued to each of them for his or her share. It is in townships 25 and 26 north, ranges 6 and 7 east, and is bounded on the map by green lines.

This ended all Indian tribal title to lands within the State of Indiana.

The results to accrue from the researches contemplated under the 2d, 3d, 4th, and 5th subdivisions of the work suggested have already been outlined with sufficient clearness, and need not be further elaborated here.

A source of much delay in the collection of facts essential to the completion of the work is the apparent indifference of librarians and others in responding to letters of inquiry. Some, however, have entered most zealously and intelligently into the work of searching musty records and interviewing the traditional "oldest inhabitant" for light on these dark spots. Thanks are especially due in this regard to Hon. John M. Lea, Nashville, Tenn.; William Harden, librarian State Historical Society, Savannah, Ga.; K. A. Linderfelt, librarian Public Library, Milwaukee, Wis.; Dr. John A. Rice, Merton, Wis.; Hon. John Wentworth, Chicago, Ill.; A. Cheesebrough and Hon. J. N. Campbell, of Detroit, Mich.; D. S. Durrie, librarian State Historical Society, Madison, Wis.; H. M. Robinson, Milwaukee, Wis.; Andrew Jackson, Sault Ste. Marie, Mich.; A. W. Rush, Palmyra, Mo.; H. C. Campbell, Centreville, Mich., and others.

SMITHSONIAN INSTITUTION——BUREAU OF ETHNOLOGY.
J. W. POWELL, DIRECTOR.

SIGN LANGUAGE

AMONG

NORTH AMERICAN INDIANS

COMPARED WITH THAT AMONG OTHER PEOPLES AND DEAF-MUTES.

BY

GARRICK MALLERY.

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AMONG

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BY GARRICK MALLERY.

INTRODUCTORY.

During the past two years the present writer has devoted the intervals between official duties to collecting and collating materials for the study of sign language. As the few publications on the general subject, possessing more than historic interest, are meager in details and vague in expression, original investigation has been necessary. The high development of communication by gesture among the tribes of North America, and its continued extensive use by many of them, naturally directed the first researches to that continent, with the result that a large body of facts procured from collaborators and by personal examination has now been gathered and classified. A correspondence has also been established with many persons in other parts of the world whose character and situation rendered it probable that they would contribute valuable information. The success of that correspondence has been as great as could have been expected, considering that most of the persons addressed were at distant points sometimes not easily accessible by mail. As the collection of facts is still successfully proceeding, not only with reference to foreign peoples and to deaf-mutes everywhere, but also among some American tribes not yet thoroughly examined in this respect, no exposition of the subject pretending to be complete can yet be made. In complying, therefore, with the request to prepare the present paper, it is necessary to explain to correspondents and collaborators whom it may reach, that this is not the comprehensive publication by the Bureau of Ethnology for which their assistance has been solicited. With this explanation some of those who have already forwarded contributions will not be surprised at their omission, and others will not desist from the work in which they are still kindly engaged, under the impression that its results will not be received in time to meet with welcome and credit. On the contrary, the urgent appeal for aid before addressed to

officers of the Army and Navy of this and other nations, to missionaries, travelers, teachers of deaf-mutes, and philologists generally, is now with equal urgency repeated. It is, indeed, hoped that the continued presentation of the subject to persons either having opportunity for observation or the power to favor with suggestions may, by awakening some additional interest in it, secure new collaboration from localities still unrepresented.

It will be readily understood by other readers that, as the limits assigned to this paper permit the insertion of but a small part of the material already collected and of the notes of study made upon that accumulation, it can only show the general scope of the work undertaken, and not its accomplishment. Such extracts from the collection have been selected as were regarded as most illustrative, and they are preceded by a discussion perhaps sufficient to be suggestive, though by no means exhaustive, and designed to be for popular, rather than for scientific use. In short, the direction to submit a progress-report and not a monograph has been complied with.

DIVISIONS OF GESTURE SPEECH.

These are corporeal motion and facial expression. An attempt has been made by some writers to discuss these general divisions separately, and its success would be practically convenient if it were always understood that their connection is so intimate that they can never be altogether severed. A play of feature, whether instinctive or voluntary, accentuates and qualifies all motions intended to serve as signs, and strong instinctive facial expression is generally accompanied by action of the body or some of its members. But, so far as a distinction can be made, expressions of the features are the result of emotional, and corporeal gestures, of intellectual action. The former in general and the small number of the latter that are distinctively emotional are nearly identical among men from physiological causes which do not affect with the same similarity the processes of thought. The large number of corporeal gestures expressing intellectual operations require and admit of more variety and conventionality. Thus the features and the body among all mankind act almost uniformly in exhibiting fear, grief, surprise, and shame, but all objective conceptions are varied and variously portrayed. Even such simple indications as those for "no" and "yes" appear in several differing motions. While, therefore, the terms sign language and gesture speech necessarily include and suppose facial expression when emotions are in question, they refer more particularly to corporeal motions and attitudes. For this reason much of the valuable contribution of DARWIN in his *Expression of the Emotions in Man and Animals* is not directly applicable to sign language. His analysis

of emotional gestures into those explained on the principles of serviceable associated habits, of antithesis, and of the constitution of the nervous system, should, nevertheless, always be remembered. Even if it does not strictly embrace the class of gestures which form the subject of this paper, and which often have an immediate pantomimic origin, the earliest gestures were doubtless instinctive and generally emotional, preceding pictorial, metaphoric, and, still subsequent, conventional gestures even, as, according to DARWIN's cogent reasoning, they preceded articulate speech.

While the distinction above made between the realm of facial play and that of motions of the body, especially those of the arms and hands, is sufficiently correct for use in discussion, it must be admitted that the features do express intellect as well as emotion. The well-known saying of Charles Lamb that "jokes came in with the candles" is in point, but the most remarkable example of conveying detailed information without the use of sounds, hands, or arms, is given by the late President T. H. Gallaudet, the distinguished instructor of deaf-mutes, which, to be intelligible, requires to be quoted at length:

"One day, our distinguished and lamented historical painter, Col. John Trumbull, was in my school-room during the hours of instruction, and, on my alluding to the tact which the pupil referred to had of reading my face, he expressed a wish to see it tried. I requested him to select any event in Greek, Roman, English, or American history of a scenic character, which would make a striking picture on canvas, and said I would endeavor to communicate it to the lad. 'Tell him,' said he, 'that Brutus (Lucius Junius) condemned his two sons to death for resisting his authority and violating his orders.'

"I folded my arms in front of me, and kept them in that position, to preclude the possibility of making any signs or gestures, or of spelling any words on my fingers, and proceeded, as best I could, by the expression of my countenance, and a few motions of my head and attitudes of the body, to convey the picture in my own mind to the mind of my pupil.

"It ought to be stated that he was already acquainted with the fact, being familiar with the leading events in Roman history. But when I began, he knew not from what portion of history, sacred or profane, ancient or modern, the fact was selected. From this wide range, my delineation on the one hand and his ingenuity on the other had to bring it within the division of Roman history, and, still more minutely, to the particular individual and transaction designated by Colonel Trumbull. In carrying on the process, I made no use whatever of any arbitrary, conventional look, motion, or attitude, before settled between us, by which to let him understand what I wished to communicate, with the exception of a single one, if, indeed, it ought to be considered such.

"The usual sign, at that time, among the teachers and pupils, for a Roman, was portraying an aquiline nose by placing the fore-finger,

crooked, in front of the nose. As I was prevented from using my finger in this way, and having considerable command over the muscles of my face, I endeavored to give my nose as much of the aquiline form as possible, and succeeded well enough for my purpose. * * *

"The outlines of the process were the following:

"A stretching and stretching gaze eastward, with an undulating motion of the head, as if looking across and beyond the Atlantic Ocean, to denote that the event happened, not on the western, but eastern continent. This was making a little progress, as it took the subject out of the range of American history.

"A turning of the eyes upward and backward, with frequently-repeated motions of the head backward, as if looking a great way back in past time, to denote that the event was one of ancient date.

"The aquiline shape of the nose, already referred to, indicating that a Roman was the person concerned. It was, of course, an old Roman.

"Portraying, as well as I could, by my countenance, attitude, and manner an individual high in authority, and commanding others, as if he expected to be obeyed.

"Looking and acting as if I were giving out a specific order to many persons, and threatening punishment on those who should resist my authority, even the punishment of death.

"Here was a pause in the progress of events, which I denoted by sleeping as it were during the night and awakening in the morning, and doing this several times, to signify that several days had elapsed.

"Looking with deep interest and surprise, as if at a single person brought and standing before me, with an expression of countenance indicating that he had violated the order which I had given, and that I knew it. Then looking in the same way at another person near him as also guilty. Two offending persons were thus denoted.

"Exhibiting serious deliberation, then hesitation, accompanied with strong conflicting emotions, producing perturbation, as if I knew not how to feel or what to do.

"Looking first at one of the persons before me, and then at the other, and then at both together, *as a father would look*, indicating his distressful parental feelings under such afflicting circumstances.

"Composing my feelings, showing that a change was coming over me, and exhibiting towards the imaginary persons before me the decided look of the inflexible commander, who was determined and ready to order them away to execution. Looking and acting as if the tender and forgiving feelings of *the father* had again got the ascendency, and as if I was about to relent and pardon them.

"These alternating states of mind I portrayed several times, to make my representations the more graphic and impressive.

"At length the father yields, and the stern principle of justice, as expressed in my countenance and manners, prevails. My look and action

denote the passing of the sentence of death on the offenders, and the ordering them away to execution.

* * * * * * *

"He quickly turned round to his slate and wrote a correct and complete account of this story of Brutus and his two sons."

While it appears that the expressions of the features are not confined to the emotions or to distinguishing synonyms, it must be remembered that the meaning of the same motion of hands, arms, and fingers is often modified, individualized, or accentuated by associated facial changes and postures of the body not essential to the sign, which emotional changes and postures are at once the most difficult to describe and the most interesting when intelligently reported, not only because they infuse life into the skeleton sign, but because they may belong to the class of innate expressions.

THE ORIGIN OF SIGN LANGUAGE.

In observing the maxim that nothing can be thoroughly understood unless its beginning is known, it becomes necessary to examine into the origin of sign language through its connection with that of oral speech. In this examination it is essential to be free from the vague popular impression that some oral language, of the general character of that now used among mankind, is "natural" to mankind. It will be admitted on reflection that all oral languages were at some past time far less serviceable to those using them than they are now, and as each particular language has been thoroughly studied it has become evident that it grew out of some other and less advanced form. In the investigation of these old forms it has been so difficult to ascertain how any of them first became a useful instrument of inter-communication that many conflicting theories on this subject have been advocated.

Oral language consists of variations and mutations of vocal sounds produced as signs of thought and emotion. But it is not enough that those signs should be available as the vehicle of the producer's own thoughts. They must be also efficient for the communication of such thoughts to others. It has been, until of late years, generally held that thought was not possible without oral language, and that, as man was supposed to have possessed from the first the power of thought, he also from the first possessed and used oral language substantially as at present. That the latter, as a special faculty, formed the main distinction between man and the brutes has been and still is the prevailing doctrine. In a lecture delivered before the British Association in 1878 it was declared that "animal intelligence is unable to elaborate that class of abstract ideas, the formation of which depends upon the faculty of speech." If instead of "speech" the word "utterance" had been used,

as including all possible modes of intelligent communication, the statement might pass without criticism. But it may be doubted if there is any more necessary connection between abstract ideas and sounds, the mere signs of thought, that strike the ear, than there is between the same ideas and signs addressed only to the eye.

The point most debated for centuries has been, not whether there was any primitive oral language, but what that language was. Some literalists have indeed argued from the Mosaic narrative that because the Creator, by one supernatural act, with the express purpose to form separate peoples, had divided all tongues into their present varieties, and could, by another similar exercise of power, obliterate all but one which should be universal, the fact that he had not exercised that power showed it not to be his will that any man to whom a particular speech had been given should hold intercourse with another miraculously set apart from him by a different speech. By this reasoning, if the study of a foreign tongue was not impious, it was at least clear that the primitive language had been taken away as a disciplinary punishment, as the Paradisiac Eden had been earlier lost, and that, therefore, the search for it was as fruitless as to attempt the passage of the flaming sword. More liberal Christians have been disposed to regard the Babel story as allegorical, if not mythical, and have considered it to represent the disintegration of tongues out of one which was primitive. In accordance with the advance of linguistic science they have successively shifted back the postulated primitive tongue from Hebrew to Sanscrit, then to Aryan, and now seek to evoke from the vasty deeps of antiquity the ghosts of other rival claimants for precedence in dissolution. As, however, the languages of man are now recognized as extremely numerous, and as the very sounds of which these several languages are composed are so different that the speakers of some are unable to distinguish with the ear certain sounds in others, still less able to reproduce them, the search for one common parent language is more difficult than was supposed by mediæval ignorance.

The discussion is now, however, varied by the suggested possibility that man at some time may have existed without any oral language. It is conceded by some writers that mental images or representations can be formed without any connection with sound, and may at least serve for thought, though not for expression. It is certain that concepts, however formed, can be expressed by other means than sound. One mode of this expression is by gesture, and there is less reason to believe that gestures commenced as the interpretation of, or substitute for words than that the latter originated in, and served to translate gestures. Many arguments have been advanced to prove that gesture language preceded articulate speech and formed the earliest attempt at communication, resulting from the interacting subjective and objective conditions to which primitive man was exposed. Some of the facts on which deductions have been based, made in accordance with well-established modes of scientific research from study of the lower animals, children, idiots, the lower types of mankind, and deaf-mutes, will be briefly mentioned.

GESTURES OF THE LOWER ANIMALS.

Emotional expression in the features of man is to be considered in reference to the fact that the special senses either have their seat in, or are in close relation to the face, and that so large a number of nerves pass to it from the brain. The same is true of the lower animals, so that it would be inferred, as is the case, that the faces of those animals are also expressive of emotion. There is also noticed among them an exhibition of emotion by corporeal action. This is the class of gestures common to them with the earliest made by man, as above mentioned, and it is reasonable to suppose that those were made by man at the time when, if ever, he was, like the animals, destitute of articulate speech. The articulate cries uttered by some animals, especially some birds, are interesting as connected with the principle of imitation to which languages in part owe their origin, but in the cases of forced imitation, the mere acquisition of a vocal trick, they only serve to illustrate that power of imitation, and are without significance. Sterne's starling, after his cage had been opened, would have continued to complain that he could not get out. If the bird had uttered an instinctive cry of distress when in confinement and a note of joy on release, there would have been a nearer approach to language than if it had clearly pronounced many sentences. Such notes and cries of animals, many of which are connected with reproduction and nutrition, are well worth more consideration than can now be given, but regarding them generally it is to be questioned if they are so expressive as the gestures of the same animals. It is contended that the bark of a dog is distinguishable into fear, defiance, invitation, and a note of warning, but it also appears that those notes have been known only since the animal has been domesticated. The gestures of the dog are far more readily distinguished than his bark, as in his preparing for attack, or caressing his master, resenting an injury, begging for food, or simply soliciting attention. The chief modern use of his tail appears to be to express his ideas and sensations. But some recent experiments of Prof. A. GRAHAM BELL, no less eminent from his work in artificial speech than in telephones, shows that animals are more physically capable of pronouncing articulate sounds than has been supposed. He informed the writer that he recently succeeded by manipulation in causing an English terrier to form a number of the sounds of our letters, and particularly brought out from it the words "How are you, Grandmamma?" with distinctness. This tends to prove that only absence of brain power has kept animals from acquiring true speech. The remarkable vocal instrument of the parrot could be used in significance as well as in imitation, if its brain had been developed beyond the point of expression by gesture, in which latter the bird is expert.

The gestures of monkeys, whose hands and arms can be used, are nearly akin to ours. Insects communicate with each other almost entirely by means of the antennæ. Animals in general which, though not deaf, can

not be taught by sound, frequently have been by signs, and probably all of them understand man's gestures better than his speech. They exhibit signs to one another with obvious intention, and they also have often invented them as a means of obtaining their wants from man.

GESTURES OF YOUNG CHILDREN.

The wishes and emotions of very young children are conveyed in a small number of sounds, but in a great variety of gestures and facial expressions. A child's gestures are intelligent long in advance of speech; although very early and persistent attempts are made to give it instruction in the latter but none in the former, from the time when it begins *risu cognoscere matrem.* It learns words only as they are taught, and learns them through the medium of signs which are not expressly taught. Long after familiarity with speech, it consults the gestures and facial expressions of its parents and nurses as if seeking thus to translate or explain their words. These facts are important in reference to the biologic law that the order of development of the individual is the same as that of the species.

Among the instances of gestures common to children throughout the world is that of protruding the lips, or pouting, when somewhat angry or sulky. The same gesture is now made by the anthropoid apes and is found strongly marked in the savage tribes of man. It is noticed by evolutionists that animals retain during early youth, and subsequently lose, characters once possessed by their progenitors when adult, and still retained by distinct species nearly related to them.

The fact is not, however, to be ignored that children invent words as well as signs with as natural an origin for the one as for the other. An interesting case was furnished to the writer by Prof. BELL of an infant boy who used a combination of sounds given as "nyum-nyum," an evident onomatope of gustation, to mean "good," and not only in reference to articles of food relished but as applied to persons of whom the child was fond, rather in the abstract idea of "niceness" in general. It is a singular coincidence that a bright young girl, a friend of the writer, in a letter describing a juvenile feast, invented the same expression, with nearly the same spelling, as characteristic of her sensations regarding the delicacies provided. The Papuans met by Dr. Comrie also called "eating" *nam-nam.* But the evidence of all such cases of the voluntary use of articulate speech by young children is qualified by the fact that it has been inherited from very many generations, if not quite so long as the faculty of gesture.

GESTURES IN MENTAL DISORDER.

The insane understand and obey gestures when they have no knowledge whatever of words. It is also found that semi-idiotic children who cannot be taught more than the merest rudiments of speech can receive a considerable amount of information through signs, and can express themselves by them. Sufferers from aphasia continue to use appro-

priate gestures after their words have become uncontrollable. It is further noticeable in them that mere ejaculations, or sounds which are only the result of a state of feeling, instead of a desire to express thought, are generally articulated with accuracy. Patients who have been in the habit of swearing preserve their fluency in that division of their vocabulary.

UNINSTRUCTED DEAF-MUTES.

The signs made by congenital and uninstructed deaf-mutes to be now considered are either strictly natural signs, invented by themselves, or those of a colloquial character used by such mutes where associated. The accidental or merely suggestive signs peculiar to families, one member of which happens to be a mute, are too much affected by the other members of the family to be of certain value. Those, again, which are taught in institutions have become conventional and designedly adapted to translation into oral speech, although founded by the abbé de l'Épée, followed by the abbé Sicard, in the natural signs first above mentioned.

A great change has doubtless occurred in the estimation of congenital deaf-mutes since the Justinian Code, which consigned them forever to legal infancy, as incapable of intelligence, and classed them with the insane. Yet most modern writers, for instance Archbishop Whately and Max Müller, have declared that deaf-mutes could not think until after having been instructed. It cannot be denied that the deaf-mute thinks after his instruction either in the ordinary gesture signs or in the finger alphabet, or more lately in artificial speech. By this instruction he has become master of a highly-developed language, such as English or French, which he can read, write, and actually talk, but that foreign language he has obtained through the medium of signs. This is a conclusive proof that signs constitute a real language and one which admits of thought, for no one can learn a foreign language unless he had some language of his own, whether by descent or acquisition, by which it could be translated, and such translation into the new language could not even be commenced unless the mind had been already in action and intelligently using the original language for that purpose. In fact the use by deaf-mutes of signs originating in themselves exhibits a creative action of mind and innate faculty of expression beyond that of ordinary speakers who acquired language without conscious effort. The thanks of students, both of philology and psychology, are due to Prof. SAMUEL PORTER, of the National Deaf Mute College, for his response to the question, "Is thought possible without language?" published in the *Princeton Review* for January, 1880.

With regard to the sounds uttered by deaf-mutes, the same explanation of heredity may be made as above, regarding the words invented by young children. Congenital deaf-mutes at first make the same sounds as hearing children of the same age, and, often being susceptible to vibrations of the air, are not suspected of being deaf. When that affliction is ascertained to exist, all oral utterances from the deaf-mute are habitually repressed by the parents.

GESTURES OF THE BLIND.

The facial expressions and gestures of the congenitally blind are worthy of attention. The most interesting and conclusive examples come from the case of Laura Bridgman, who, being also deaf, could not possibly have derived them by imitation. When a letter from a beloved friend was communicated to her by gesture-language, she laughed and clapped her hands. A roguish expression was given to her face, concomitant with the emotion, by her holding the lower lip by the teeth. She blushed, shrugged her shoulders, turned in her elbows, and raised her eye-brows under the same circumstances as other people. In amazement, she rounded and protruded the lips, opened them, and breathed strongly. It is remarkable that she constantly accompanied her "yes" with the common affirmative nod, and her "no" with our negative shake of the head, as these gestures are by no means universal and do not seem clearly connected with emotion. This, possibly, may be explained by the fact that her ancestors for many generations had used these gestures. A similar curious instance is mentioned by Cardinal Wiseman (*Essays*, III, 547, *London*, 1853) of an Italian blind man, the appearance of whose eyes indicated that he had never enjoyed sight, and who yet made the same elaborate gestures made by the people with whom he lived, but which had been used by them immemorially, as correctly as if he had learned them by observation.

LOSS OF SPEECH BY ISOLATION.

When human beings have been long in solitary confinement, been abandoned, or otherwise have become isolated from their fellows, they have lost speech either partially or entirely, and required to have it renewed through gestures. There are also several recorded cases of children, born with all their faculties, who, after having been lost or abandoned, have been afterwards found to have grown up possessed of acute hearing, but without anything like human speech. One of these was Peter, "the Wild Boy," who was found in the woods of Hanover in 1726, and taken to England, where vain attempts were made to teach him language, though he lived to the age of seventy. Another was a boy of twelve, found in the forest of Aveyron, in France, about the beginning of this century, who was destitute of speech, and all efforts to teach him failed. Some of these cases are to be considered in connection with the general law of evolution, that in degeneration the last and highest acquirements are lost first. When in these the effort at acquiring or re-acquiring speech has been successful, it has been through gestures, in the same manner as missionaries, explorers, and shipwrecked mariners have become acquainted with tongues before unknown to themselves and sometimes to civilization. All persons in such circumstances are obliged to proceed by pointing to objects and making gesticulations,

at the same time observing what articulate sounds were associated with those motions by the persons addressed, and thus vocabularies and lists of phrases were formed.

LOW TRIBES OF MAN.

Apart from the establishment of a systematic language of signs under special circumstances which have occasioned its development, the gestures of the lower tribes of men may be generally classed under the emotional or instinctive division, which can be correlated with those of the lower animals. This may be illustrated by the modes adopted to show friendship in salutation, taking the place of our shaking hands. Some Pacific Islanders used to show their joy at meeting friends by sniffing at them, after the style of well-disposed dogs. The Fuegians pat and slap each other, and some Polynesians stroke their own faces with the hand or foot of the friend. The practice of rubbing or pressing noses is very common. It has been noticed in the Lapland Alps, often in Africa, and in Australia the tips of the noses are pressed a long time, accompanied with grunts of satisfaction. Patting and stroking different parts of the body are still more frequent, and prevailed among the North American Indians, though with the latter the most common expression was hugging. In general, the civilities exchanged are similar to those of many animals.

GESTURES AS AN OCCASIONAL RESOURCE.

Persons of limited vocabulary, whether foreigners to the tongue employed or native, but not accomplished in its use, even in the midst of a civilization where gestures are deprecated, when at fault for words resort instinctively to physical motions that are not wild nor meaningless, but picturesque and significant, though perhaps made by the gesturer for the first time. An uneducated laborer, if good-natured enough to be really desirous of responding to a request for information, when he has exhausted his scanty stock of words will eke them out by original gestures. While fully admitting the advice to Coriolanus—

> Action is eloquence, and the eyes of the ignorant
> More learned than the ears—

it may be paraphrased to read that the hands of the ignorant are more learned than their tongues. A stammerer, too, works his arms and features as if determined to get his thoughts out, in a manner not only suggestive of the physical struggle, but of the use of gestures as a hereditary expedient.

GESTURES OF FLUENT TALKERS.

The same is true of the most fluent talkers on occasions when the exact vocal formula desired does not at once suggest itself, or is unsatisfactory without assistance from the physical machinery not embraced in the oral apparatus. The command of a copious vocabulary common

to both speaker and hearer undoubtedly tends to a phlegmatic delivery and disdain of subsidiary aid. An excited speaker will, however, generally make a free use of his hands without regard to any effect of that use upon auditors. Even among the gesture-hating English, when they are aroused from torpidity of manner, the hands are involuntarily clapped in approbation, rubbed with delight, wrung in distress, raised in astonishment, and waved in triumph. The fingers are snapped for contempt, the forefinger is vibrated to reprove or threaten, and the fist shaken in defiance. The brow is contracted with displeasure, and the eyes winked to show connivance. The shoulders are shrugged to express disbelief or repugnance, the eyebrows elevated with surprise, the lips bitten in vexation and thrust out in sullenness or displeasure, while a higher degree of anger is shown by a stamp of the foot. Quintilian, regarding the subject, however, not as involuntary exhibition of feeling and intellect, but for illustration and enforcement, becomes eloquent on the variety of motions of which the hands alone are capable, as follows:

"The action of the other parts of the body assists the speaker, but the hands (I could almost say) speak themselves. By them do we not demand, promise, call, dismiss, threaten, supplicate, express abhorrence and terror, question and deny? Do we not by them express joy and sorrow, doubt, confession, repentance, measure, quantity, number, and time? Do they not also encourage, supplicate, restrain, convict, admire, respect? and in pointing out places and persons do they not discharge the office of adverbs and of pronouns?"

Voss adopts almost the words of Quintilian, "*Manus non modo loquentem adjuvant, sed ipsæ pene loqui videntur,*" while Cresollius calls the hand "the minister of reason and wisdom * * * without it there is no eloquence."

INVOLUNTARY RESPONSE TO GESTURES.

Further evidence of the unconscious survival of gesture language is afforded by the ready and involuntary response made in signs to signs when a man with the speech and habits of civilization is brought into close contact with Indians or deaf-mutes. Without having ever before seen or made one of their signs, he will soon not only catch the meaning of theirs, but produce his own, which they will likewise comprehend, the power seemingly remaining latent in him until called forth by necessity.

NATURAL PANTOMIME.

In the earliest part of man's history the subjects of his discourse must have been almost wholly sensuous, and therefore readily expressed in pantomime. Not only was pantomime sufficient for all the actual needs of his existence, but it is not easy to imagine how he could have used language such as is now known to us. If the best English dictionary and grammar had been miraculously furnished to him, together with the art of reading with proper pronunciation, the gift would have been valueless, because the ideas expressed by the words had not yet been formed.

That the early concepts were of a direct and material character is shown by what has been ascertained of the roots of language, and there does not appear to be much difficulty in expressing by other than vocal instrumentality all that could have been expressed by those roots. Even now, with our vastly increased belongings of external life, avocations, and habits, nearly all that is absolutely necessary for our physical needs can be expressed in pantomime. Far beyond the mere signs for eating, drinking, sleeping, and the like, any one will understand a skillful representation in signs of a tailor, shoemaker, blacksmith, weaver, sailor, farmer, or doctor. So of washing, dressing, shaving, walking, driving, writing, reading, churning, milking, boiling, roasting or frying, making bread or preparing coffee, shooting, fishing, rowing, sailing, sawing, planing, boring, and, in short, an endless list.

Max Müller properly calls touch, scent, and taste the palaioteric, and sight and hearing the neoteric senses, the latter of which often require to be verified by the former. Touch is the lowest in specialization and development, and is considered to be the oldest of the senses, the others indeed being held by some writers to be only its modifications. Scent, of essential importance to many animals, has with man almost ceased to be of any, except in connection with taste, which he has developed to a high degree. Whether or not sight preceded hearing in order of development, it is difficult, in conjecturing the first attempts of man or his hypothetical ancestor at the expression either of percepts or concepts, to connect vocal sounds with any large number of objects, but it is readily conceivable that the characteristics of their forms and movements should have been suggested to the eye—fully exercised before the tongue—so soon as the arms and fingers became free for the requisite simulation or portrayal. There is little distinction between pantomime and a developed sign language, in which thought is transmitted rapidly and certainly from hand to eye as it is in oral speech from lips to ear; the former is, however, the parent of the latter, which is more abbreviated and less obvious. Pantomime acts movements, reproduces forms and positions, presents pictures, and manifests emotions with greater realization than any other mode of utterance. It may readily be supposed that a troglodyte man would desire to communicate the finding of a cave in the vicinity of a pure pool, circled with soft grass, and shaded by trees bearing edible fruit. No sound of nature is connected with any of those objects, but the position and size of the cave, its distance and direction, the water, its quality, and amount, the verdant circling carpet, and the kind and height of the trees could have been made known by pantomime in the days of the mammoth, if articulate speech had not then been established, as Indians or deaf-mutes now communicate similar information by the same agency.

The proof of this fact, as regards deaf-mutes, will hardly be demanded, as their expressive pantomime has been so often witnessed. That of

the North American Indians, as distinct from the signs which are generally its abbreviations, has been frequently described in general terms, but it may be interesting to present two instances from remote localities.

A Maricopa Indian, in the present limits of Arizona, was offered an advantageous trade for his horse, whereupon he stretched himself on his horse's neck, caressed it tenderly, at the same time shutting his eyes, meaning thereby that no offer could tempt him to part with his charger.

An A-teo-mâ-wi or Pit River Indian, in Northeastern California, to explain the cause of his cheeks and forehead being covered with tar, represented a man falling, and, despite his efforts to save him, trembling, growing pale (pointing from his face to that of a white man), and sinking to sleep, his spirit winging its way to the skies, which he indicated by imitating with his hands the flight of a bird upwards, his body sleeping still upon the river bank, to which he pointed. The tar upon his face was thus shown to be his dress of mourning for a friend who had fallen and died.

Several descriptions of pure pantomime, intermixed with the more conventionalized signs, will be found in the present paper. In especial, reference is made to the Address of Kin Chê-ëss, Nátci's Narrative, the Dialogue between Alaskan Indians, and Na-wa-gi-jig's Story.

SOME THEORIES UPON PRIMITIVE LANGUAGE.

Cresollius, writing in 1620, was strongly in favor of giving precedence to gesture. He says, "Man, full of wisdom and divinity, could have appeared nothing superior to a naked trunk or block had he not been adorned with the hand as the interpreter and messenger of his thoughts." He quotes with approval the brother of St. Basil in declaring that had men been formed without hands they would never have been endowed with an articulate voice, and concludes: "Since, then, nature has furnished us with two instruments for the purpose of bringing into light and expressing the silent affections of the mind, language and the hand, it has been the opinion of learned and intelligent men that the former would be maimed and nearly useless without the latter; whereas the hand, without the aid of language, has produced many and wonderful effects."

Rabelais, who incorporated into his satirical work much true learning and philosophy, makes his hero announce the following opinion:

"Nothing less, quoth Pantagruel [Book iii, ch. xix], do I believe than that it is a mere abusing of our understandings to give credit to the words of those who say that there is any such thing as a natural language. All speeches have had their primary origin from the arbitrary institutions, accords, and agreements of nations in their respective cou-

descendments to what should be noted and betokened by them. An articulate voice, according to the dialecticians, hath naturally no signification at all; for that the sense and meaning thereof did totally depend upon the good will and pleasure of the first deviser and imposer of it."

Max Müller, following Professor Heyse, of Berlin, published an ingenious theory of primitive speech, to the effect that man had a creative faculty giving to each conception, as it thrilled through his brain for the first time, a special phonetic expression, which faculty became extinct when its necessity ceased. This theory, which makes each radical of language to be a phonetic type rung out from the organism of the first man or men when struck by an idea, has been happily named the "ding-dong" theory. It has been abandoned mainly through the destructive criticisms of Prof. W. D. WHITNEY, of Yale College. One lucid explanation by the latter should be specially noted: "A word is a combination of sounds which by a series of historical reasons has come to be accepted and understood in a certain community as the sign of a certain idea. As long as they so accept and understand it, it has existence; when every one ceases to use and understand it, it ceases to exist."

Several authors, among them Kaltschmidt, contend that there was but one primitive language, which was purely onomatopœic, that is, imitative of natural sounds. This has been stigmatized as the "bow-wow" theory, but its advocates might derive an argument from the epithet itself, as not only our children, but the natives of Papua, call the dog a "bow-wow." They have, however, gone too far in attempting to trace back words in their shape as now existing to any natural sounds instead of confining that work to the roots from which the words have sprung.

Another attempt has been made, represented by Professor Noiré, to account for language by means of interjectional cries. This Max Müller revengefully styled the "pooh-pooh" theory. In it is included the rhythmical sounds which a body of men make seemingly by a common impulse when engaged in a common work, such as the cries of sailors when hauling on a rope or pulling an oar, or the yell of savages in an attack. It also derives an argument from the impulse of life by which the child shouts and the bird sings. There are, however, very few either words or roots of words which can be proved to have that derivation.

Professor SAYCE, in his late work, *Introduction to the Science of Language, London*, 1880, gives the origin of language in gestures, in onomatopœia, and to a limited extent in interjectional cries. He concludes it to be the ordinary theory of modern comparative philologists that all languages are traced back to a certain number of abstract roots, each of which was a sort of sentence in embryo, and while he does not admit this as usually presented, he believes that there was a time in the history

of speech when the articulate or semi-articulate sounds uttered by primitive men were made the significant representations of thought by the gestures with which they were accompanied. This statement is specially gratifying to the present writer as he had advanced much the same views in his first publication on the subject in the following paragraph, now reproduced with greater confidence:

"From their own failures and discordancies, linguistic scholars have recently decided that both the 'bow-wow' and the 'ding-dong' theories are unsatisfactory; that the search for imitative, onomatopœic, and directly expressive sounds to explain the origin of human speech has been too exclusive, and that many primordial roots of language have been founded in the involuntary sounds accompanying certain actions. As, however, the action was the essential, and the consequent or concomitant sound the accident, it would be expected that a representation or feigned reproduction of the action would have been used to express the the idea before the sound associated with that action could have been separated from it. The visual onomatopœia of gestures, which even yet have been subjected to but slight artificial corruption, would therefore serve as a key to the audible. It is also contended that in the pristine days, when the sounds of the only words yet formed had close connection with objects and the ideas directly derived from them, signs were as much more copious for communication than speech, as the sight embraces more and more distinct characteristics of objects than does the sense of hearing."

CONCLUSIONS.

The preponderance of authority is in favor of the view that man, when in the possession of all his faculties, did not choose between voice and gesture, both being originally instinctive, as they both are now, and never, with those faculties, was in a state where the one was used to the absolute exclusion of the other. The long neglected work of Dalgarno, published in 1661, is now admitted to show wisdom when he says: "*non minus naturale fit homini communicare in* Figuris *quam* Sonis: *quorum utrumque dico homini* naturale." With the voice man at first imitated the few sounds of nature, while with gesture he exhibited actions, motions, positions, forms, dimensions, directions, and distances, and their derivatives. It would appear from this unequal division of capacity that oral speech remained rudimentary long after gesture had become an art. With the concession of all purely imitative sounds and of the spontaneous action of the vocal organs under excitement, it is still true that the connection between ideas and words generally depended upon a compact between the speaker and hearer which presupposes the existence of a prior mode of communication. That was probably by gesture, which, in the apposite phrase of Professor SAYCE, "like the rope-bridges of the Himalayas or the Andes, formed the first rude means of communication between man and man." At the very least it may be

gladly accepted provisionally as a clue leading out of the labyrinth of philologic confusion.

For the purpose of the present paper there is, however, no need of an absolute decision upon the priority between communication of ideas by bodily motion and by vocal articulation. It is enough to admit that the connection between them was so early and intimate that gestures, in the wide sense indicated of presenting ideas under physical forms, had a direct formative effect upon many words; that they exhibit the earliest condition of the human mind; are traced from the remotest antiquity among all peoples possessing records; are generally prevalent in the savage stage of social evolution; survive agreeably in the scenic pantomime, and still adhere to the ordinary speech of civilized man by motions of the face, hands, head, and body, often involuntary, often purposely in illustration or for emphasis.

It may be unnecessary to explain that none of the signs to be described, even those of present world-wide prevalence, are presented as precisely those of primitive man. Signs as well as words, animals, and plants have had their growth, development, and change, their births and deaths, and their struggle for existence with survival of the fittest. It is, however, thought probable from reasons hereinafter mentioned that their radicals can be ascertained with more precision than those of words.

HISTORY OF GESTURE LANGUAGE.

There is ample evidence of record, besides that derived from other sources, that the systematic use of gesture speech was of great antiquity. Livy so declares, and Quintilian specifies that the "*lex gestus* * * * *ab illis temporibus heroicis orta est.*" Plato classed its practice among civil virtues, and Chrysippus gave it place among the proper education of freemen. Athenæus tells that gestures were even reduced to distinct classification with appropriate terminology. The class suited to comedy was called Cordax, that to tragedy Eumelia, and that for satire Sicinnis, from the inventor Sicinnus. Bathyllus from these formed a fourth class, adapted to pantomime. This system appears to have been particularly applicable to theatrical performances. Quintilian, later, gave most elaborate rules for gestures in oratory, which are specially noticeable from the importance attached to the manner of disposing the fingers. He attributed to each particular disposition a significance or suitableness which are not now obvious. Some of them are retained by modern orators, but without the same, or indeed any, intentional meaning, and others are wholly disused.

The value of these digital arrangements is, however, shown by their use among the modern Italians, to whom they have directly descended.

From many illustrations of this fact the following is selected. Fig. 61 is copied from Austin's *Chironomia* as his graphic execution of the gesture described by Quintilian: "The fore finger of the right hand joining the middle of its nail to the extremity of its own thumb, and moderately extending the rest of the fingers, is graceful in *approving*." Fig. 62 is taken from De Jorio's plates and descriptions of the gestures among modern Neapolitans, with the same idea of approbation—"good." Both of these may be compared with Fig. 63, a common sign among the North American Indians to express affirmation and approbation. With the knowledge of these details it is possible to believe the story of Macrobius that Cicero used to vie with Roscius, the celebrated actor, as to which of them could express a sentiment in the greater variety of ways, the one by gesture and the other by speech, with the apparent result of victory to the actor who was so satisfied with the superiority of his art that he wrote a book on the subject.

Fig. 61

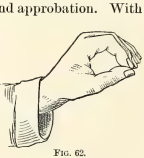

Fig. 62.

Gestures were treated of with still more distinction as connected with pantomimic dances and representations. Æschylus appears to have brought theatrical gesture to a high degree of perfection, but Telestes, a dancer employed by him, introduced the dumb show, a dance without marked dancing steps, and subordinated to motions of the hands, arms, and body, which is dramatic pantomime. He was so great an artist, says Athenæus, that when he represented the *Seven before Thebes* he rendered every circumstance manifest by his gestures alone. From Greece, or rather from Egypt, the art was brought to Rome, and in the reign of Augustus was the great delight of that Emperor and his friend Mæcenas. Bathyllus, of Alexandria, was the first to introduce it to the Roman public, but he had a dangerous rival in Pylades. The latter was magnificent, pathetic, and affecting, while Bathyllus was gay and sportive. All Rome was split into factions about their respective merits. Athenæus speaks of a distinguished performer of his own time (he died A. D. 194) named Memphis, whom he calls the "dancing philosopher," because he showed what the Pythagorean philosophy could do by exhibiting in silence everything with stronger evidence than they could who professed to teach the arts of language. In the reign of Nero, a celebrated pantomimist who had heard that the cynic philosopher Demetrius spoke of the art with contempt, prevailed upon him to witness his performance, with the result that the cynic, more and more aston-

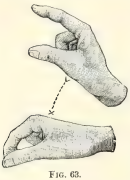

Fig. 63.

ished, at last cried out aloud, "Man, I not only see, but I hear what you do, for to me you appear to speak with your hands!"

Lucian, who narrates this in his work *De Saltatione*, gives another tribute to the talent of, perhaps, the same performer. A barbarian prince of Pontus (the story is told elsewhere of Tyridates, King of Armenia), having come to Rome to do homage to the Emperor Nero, and been taken to see the pantomimes, was asked on his departure by the Emperor what present he would have as a mark of his favor. The barbarian begged that he might have the principal pantomimist, and upon being asked why he made such an odd request, replied that he had many neighbors who spoke such various and discordant languages that he found it difficult to obtain any interpreter who could understand them or explain his commands; but if he had the dancer he could by his assistance easily make himself intelligible to all.

While the general effect of these pantomimes is often mentioned, there remain but few detailed descriptions of them. Apuleius, however, in the tenth book of his *Metamorphosis* or "Golden Ass," gives sufficient details of the performance of the Judgment of Paris to show that it strongly resembled the best form of ballet opera known in modern times. These exhibitions were so greatly in favor that, according to Ammianus Marcellinus, there were in Rome in the year 190 six thousand persons devoted to the art, and that when a famine raged they were all kept in the city, though besides all the strangers all the philosophers were forced to leave. Their popularity continued until the sixth century, and it is evident from a decree of Charlemagne that they were not lost, or at least, had been revived in his time. Those of us who have enjoyed the performance of the original Ravel troupe will admit that the art still survives, though not with the magnificence or perfection, especially with reference to serious subjects, which it exhibited in the age of imperial Rome.

Early and prominent among the post-classic works upon gesture is that of the venerable Bede (who flourished A. D. 672–735) *De Loquelâ per Gestum Digitorum, sive de Indigitatione.* So much discussion had indeed been carried on in reference to the use of signs for the desideratum of a universal mode of communication, which also was designed to be occult and mystic, that Rabelais, in the beginning of the sixteenth century, who, however satirical, never spent his force upon matters of little importance, devotes much attention to it. He makes his English philosopher, Thaumast "The Wonderful" declare, "I will dispute by signs only, without speaking, for the matters are so abstruse, hard, and arduous, that words proceeding from the mouth of man will never be sufficient for unfolding of them to my liking."

The earliest contributions of practical value connected with the subject were made by George Dalgarno, of Aberdeen, in two works, one published in London, 1661, entitled *Ars Signorum, vulgo character universalis et lingua philosophica,* and the other printed at Oxford,

1680, entitled, *Didascalocophus, or the Deaf and Dumb Man's Tutor.* He spent his life in obscurity, and his works, though he was incidentally mentioned by Leibnitz under the name of "M. Dalgarus," passed into oblivion. Yet he undoubtedly was the precursor of Bishop Wilkins in his *Essay toward a Real Character and a Philosophical Language*, published in London, 1668, though indeed the first idea was far older, it having been, as reported by Piso, the wish of Galen that some way might be found out to represent things by such peculiar signs and names as should express their natures. Dalgarno's ideas respecting the education of the dumb were also of the highest value, and though they were too refined and enlightened to be appreciated at the period when he wrote, they probably were used by Dr. Wallis if not by Sicard. Some of his thoughts should be quoted: "As I think the eye to be as docile as the ear; so neither see I any reason but the hand might be made as tractable an organ as the tongue; and as soon brought to form, if not fair, at least legible characters, as the tongue to imitate and echo back articulate sounds." A paragraph prophetic of the late success in educating blind deaf-mutes is as follows: "The soul can exert her powers by the ministry of any of the senses: and, therefore, when she is deprived of her principal secretaries, the eye and the ear, then she must be contented with the service of her lackeys and scullions, the other senses; which are no less true and faithful to their mistress than the eye and the ear; but not so quick for dispatch."

In his division of the modes of "expressing the inward emotions by outward and sensible signs" he relegates to physiology cases "when the internal passions are expressed by such external signs as have a natural connection, by way of cause and effect, with the passion they discover, as laughing, weeping, frowning, &c., and this way of interpretation being common to the brute with man belongs to natural philosophy. And because this goes not far enough to serve the rational soul, therefore, man has invented Sematology." This he divides into Pneumatology, interpretation by sounds conveyed through the ear; Schematology, by figures to the eye, and Haptology, by mutual contact, skin to skin. Schematology is itself divided into Typology or Grammatology, and Cheirology or Dactylology. The latter embraces "the transient motions of the fingers, which of all other ways of interpretation comes nearest to that of the tongue."

As a phase in the practice of gestures in lieu of speech must be mentioned the code of the Cistercian monks, who were vowed to silence except in religious exercises. That they might literally observe their vows they were obliged to invent a system of communication by signs, a list of which is given by Leibnitz, but does not show much ingenuity.

A curious description of the speech of the early inhabitants of the world, given by Swedenborg in his *Arcana Cœlestia*, published 1749–1756, may be compared with the present exhibitions of deaf-mutes in institutions for their instruction. He says it was not articulate like the

FIG. 64.—Group from an ancient Greek vase.

vocal speech of our time, but was tacit, being produced not by external respiration, but by internal. They were able to express their meaning by slight motions of the lips and corresponding changes of the face.

Austin's comprehensive work, *Chironomia, or a Treatise on Rhetorical Delivery, London*, 1806, is a repertory of information for all writers on gesture, who have not always given credit to it, as well as on all branches of oratory. This has been freely used by the present writer, as has also the volume by the canon Andrea de Jorio, *La Mimica degli Antichi investigata nel Gestire Napoletano, Napoli*, 1832. The canon's chief object was to interpret the gestures of the ancients as shown in their works of art and described in their writings, by the modern gesticulations of the Neapolitans, and he has proved that the general system of gesture once prevailing in ancient Italy is substantially the same as now observed. With an understanding of the existing language of gesture the scenes on the most ancient Greek vases and reliefs obtain a new and interesting significance and form a connecting link between the present and prehistoric times. Two of De Jorio's plates are here reproduced, Figs. 64 and 67, with such explanation and further illustration as is required for the present subject.

The spirited figures upon the ancient vase, Fig. 64, are red upon a black ground and are described in the published account in French of the collection of Sir John Coghill, Bart., of which the following is a free translation:

Dionysos or Bacchus is represented with a strong beard, his head girt with the credemnon, clothed in a long folded tunic, above which is an ample cloak, and holding a thyrsus. Under the form of a satyr, Comus, or the genius of the table, plays on the double flute and tries to excite to the dance two nymphs, the companions of Bacchus—Galené, Tranquility, and Eudia, Serenity. The first of them is dressed in a tunic, above which is a fawn skin, holding a tympanum or classic drum on which she is about to strike, while her companion marks the time by a snapping of the fingers, which custom the author of the catalogue wisely states is still kept up in Italy in the dance of the tarantella. The composition is said to express allegorically that pure and serene pleasures are benefits derived from the god of wine.

This is a fair example of the critical acumen of art-commentators. The gestures of the two nymphs are interesting, but on very slight examination it appears that those of Galené have nothing to do with beat of drum, nor have those of Eudia any connection with music, though it is not so clear what is the true subject under discussion. Aided, however, by the light of the modern sign language of Naples, there seems to be by no means serenity prevailing, but a quarrel between the ladies, on a special subject which is not necessarily pure. The nymph at the reader's left fixes her eyes upon her companion with her index in the same direction, clearly indicating, *thou*. That the address is reproachful is shown from her countenance, but with greater certainty from her attitude and the corresponding one of her companion, who raises

both her hands in suprise accompanied with negation. The latter is expressed by the right hand raised toward the shoulder, with the palm opposed to the person to whom response is made. This is the rejection of the idea presented, and is expressed by some of our Indians, as shown in Fig. 65. A sign of the Dakota tribe of Indians with the same signification is given in Fig. 270, page 441, *infra*. At the same time the upper part of the nymph's body is drawn backward as far as the preservation of equilibrium permits. So a reproach or accusation is made on the one part, and denied, whether truthfully or not, on the other. Its subject also may be ascertained. The left hand of Eudia is not mute; it is held towards her rival with the balls of the index and thumb united, the modern Neapolitan sign for *love*, which is drawn more clearly in Fig. 66. It is called the kissing of the thumb and finger, and there is ample authority to show that among the ancient classics it was a sign of marriage. St. Jerome, quoted by Vincenzo Requena, says: "*Nam et ipsa digitorum conjunctio, et quasi molli osculo se complectans et fœderans, maritum pingit et conjugem*;" and Apuleius clearly alludes to the same gesture as used in the adoration of Venus, by the words "*primore digito in erectum pollicem residente.*" The gesture is one of the few out of the large number described in various parts of Rabelais' great work, the significance of which is explained. It is made by Naz-de-cabre or Goat's Nose (*Pantagruel*, Book III, Ch. XX), who lifted up into the air his left hand, the whole fingers whereof he retained fistways closed together, except the thumb and the forefinger, whose nails he softly joined and coupled to one another. "I understand, quoth Pantagruel, what he meaneth by that sign. It denotes marriage." The quarrel is thus established to be about love; and the fluting satyr seated between the two nymphs, behind whose back the accusation is furtively made by the jealous one, may well be the object concerning whom jealousy is manifested. Eudia therefore, instead of "serenely" marking time for a "tranquil" tympanist, appears to be crying, "Galené! you bad thing! you are having, or trying to have, an affair with my Comus!"—an accusation which this writer verily believes to have been just. The lady's attitude in affectation of surprised denial is not that of injured innocence.

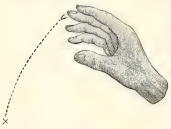

Fig. 65.

Fig. 66.

Fig. 67, taken from a vase in the Homeric Gallery, is rich in natural gestures. Without them, from the costumes and attitudes it is easy to recognize the protagonist or principal actor in the group, and its general subject. The warrior goddess Athené stands forth in the midst of what appears to be a council of war. After the study of modern gesture

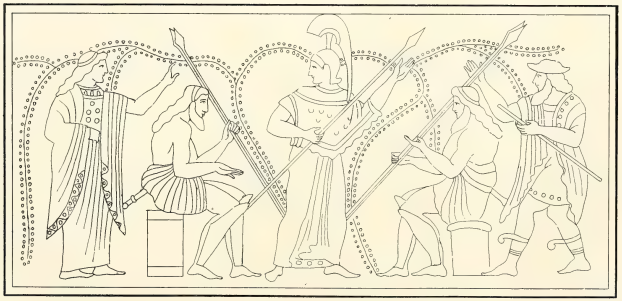

FIG. 67.—Group from a vase in the Homeric Gallery.

speech, the votes of each member of the council, with the degree of positiveness or interest felt by each, can be ascertained. Athené in animated motion turns her eyes to the right, and extends her left arm and hand to the left, with her right hand brandishing a lance in the same direction, in which her feet show her to be ready to spring. She is urging the figures on her right to follow her at once to attempt some dangerous enterprise. Of these the elderly man, who is calmly seated, holds his right hand flat and reversed, and suspended slightly above his knee. This probably is the ending of the modern Neapolitan gesture, Fig. 68, which signifies hesitation, advice to pause before hasty action, "go slowly," and commences higher with a gentle wavering movement downward. This can be compared with the sign of some of our Indians, Fig. 69, for *wait! slowly!* The female figure at the left of the group, standing firmly and decidedly, raises her left hand directed to the goddess with the palm vertical. If this is supposed to be a stationary gesture it means, "*wait! stop!*" It may, however, be the commencement of the last mentioned gesture, "*go slow.*"

Fig. 68.

Fig. 69.

Fig. 70.

Both of these members of the council advise delay and express doubt of the propriety of immediate action.

The sitting warrior on the left of Athené presents his left hand flat and carried well up. This position, supposed to be stationary, now means to *ask*, *inquire*, and it may be that he inquires of the other veteran what reasons he can produce for his temporizing policy. This may be collated with the modern Neapolitan sign for *ask*, Fig. 70, and the common Indian sign for "*tell me!*" Fig. 71. In connection with this it is also interesting to compare the Australian sign for interrogation, Fig. 72, and also the Comanche Indian sign for *give me*, Fig. 301, page 480, *infra*. If, however, the artist had the intention to represent the flat hand as in motion from below upward, as is probable from the connection, the meaning is *much*, *greatly*. He strongly disapproves the counsel of the opposite side. Our Indians often express the idea of quantity, *much*, with the same conception of comparative height, by an upward motion of the extended palm, but with them the palm is held downward. The last figure to the right, by the action of his whole body, shows his rejec-

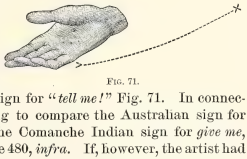

Fig. 71.

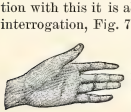

Fig. 72.

tion of the proposed delay, and his right hand gives the modern sign of combined surprise and reproof.

It is interesting to note the similarity of the merely emotional gestures and attitudes of modern Italy with those of the classics. The Pulcinella, Fig. 73, for instance, drawn from life in the streets of Naples, has the same pliancy and *abandon* of the limbs as appears in the supposed foolish slaves of the Vatican Terence.

In close connection with this branch of the study reference must be made to the gestures exhibited in the works of Italian art only modern in comparison with the high antiquity of their predecessors. A good instance is in the Last Supper of Leonardo da Vinci, painted toward the close of the fifteenth century, and to the figure of Judas as there portrayed. The gospel denounces him as a thief, which is expressed in the painting by the hand extended and slightly curved, imitative of the pilferer's act in clutching and drawing toward him furtively the stolen object, and is the same gesture that now indicates *theft* in Naples, Fig. 74, and among some of the North American Indians, Fig. 75. The pictorial propriety of the sign is preserved by the apparent desire of the traitor to obtain the one white loaf of bread on the table (the remainder being of coarser quality) which lies near where his hand is tending. Raffaelle was equally particular in his exhibition of gesture language, even unto the minutest detail of the arrangement of the fingers. It is traditional that he sketched the Madonna's hands for the Spasimo di Sicilia in eleven different positions before he was satisfied.

FIG. 73.

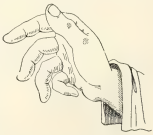

FIG. 74.

No allusion to the bibliography of gesture speech, however slight, should close without including the works of Mgr. D. De Haerne, who has, as a member of the Belgian Chamber of Representatives, in addition to his rank in the Roman Catholic Church, been active in promoting the cause of education in general, and especially that of the deaf and dumb. His admirable treatise *The Natural Language of Signs* has been translated and is accessible to American

readers in the *American Annals of the Deaf and Dumb*, 1875. In that valuable serial, conducted by Prof. E. A. FAY, of the National Deaf

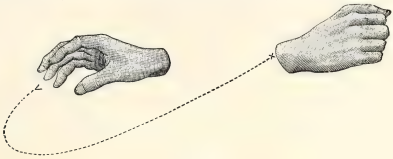

FIG. 75.

Mute College at Washington, and now in its twenty-sixth volume, a large amount of the current literature on the subject indicated by its title can be found.

MODERN USE OF GESTURE SPEECH.

DR. TYLOR says (*Early History of Mankind*, 44): "We cannot lay down as a rule that gesticulation decreases as civilization advances, and say, for instance, that a Southern Frenchman, because his talk is illustrated with gestures as a book with pictures, is less civilized than a German or Englishman." This is true, and yet it is almost impossible for persons not accustomed to gestures to observe them without associating the idea of low culture. Thus in Mr. Darwin's summing up of those characteristics of the natives of Tierra del Fuego, which rendered it difficult to believe them to be fellow-creatures, he classes their "violent gestures" with their filthy and greasy skins, discordant voices, and hideous faces bedaubed with paint. This description is quoted by the Duke of Argyle in his *Unity of Nature* in approval of those characteristics as evidence of the lowest condition of humanity.

Whether or not the power of the visible gesture relative to, and its influence upon the words of modern oral speech are in inverse proportion to the general culture, it seems established that they do not bear that or any constant proportion to the development of the several languages with which gesture is still more or less associated. The statement has frequently been made that gesture is yet to some highly-advanced languages a necessary modifying factor, and that only when a language has become so artificial as to be completely expressible in written signs—indeed, has been remodeled through their long familiar use—can the bodily signs be wholly dispensed with. The evidence for this statement is now doubted, and it is safer to affirm that a common use of gesture depends more upon the sociologic conditions of the speakers than upon the degree of copiousness of their oral speech.

USE BY OTHER PEOPLES THAN NORTH AMERICAN INDIANS.

The nearest approach to a general rule which it is now proposed to hazard is that where people speaking precisely the same dialect are not numerous, and are thrown into constant contact on equal terms with others of differing dialects and languages, gesture is necessarily resorted to for converse with the latter, and remains for an indefinite time as a habit or accomplishment among themselves, while large bodies enjoying common speech, and either isolated from foreigners, or, when in contact with them, so dominant as to compel the learning and adoption of their own tongue, become impassive in its delivery. The ungesturing English, long insular, and now rulers when spread over continents, may be compared with the profusely gesticulating Italians dwelling in a maze of dialects and subject for centuries either to foreign rule or to the influx of strangers on whom they depended. So common is the use of gestures in Italy, especially among the lower and uneducated classes, that utterance without them seems to be nearly impossible. The driver or boatman will often, on being addressed, involuntarily drop the reins or oars, at the risk of a serious accident, to respond with his arms and fingers in accompaniment of his tongue. Nor is the habit confined to the uneducated. King Ferdinand returning to Naples after the revolt of 1821, and finding that the boisterous multitude would not allow his voice to be heard, resorted successfully to a royal address in signs, giving reproaches, threats, admonitions, pardon, and dismissal, to the entire satisfaction of the assembled lazzaroni. The medium, though probably not the precise manner of its employment, recalls Lucan's account of the quieting of an older tumult—

tumultum
Composuit vultu, dextraque silentia fecit.

This rivalry of Punch would, in London, have occasioned measureless ridicule and disgust. The difference in what is vaguely styled temperament does not wholly explain the contrast between the two peoples, for the performance was creditable both to the readiness of the King in an emergency and to the aptness of his people, the main distinction being that in Italy there was in 1821, and still is, a recognized and cultivated language of signs long disused in Great Britain. In seeking to account for this it will be remembered that the Italians have a more direct descent from the people who, as has been above shown, in classic times so long and lovingly cultivated gesture as a system. They have also had more generally before their eyes the artistic relics in which gestures have been preserved.

It is a curious fact that some English writers, notably Addison (*Spectator*, 407), have contended that it does not suit the genius of that nation to use gestures even in public speaking, against which doctrine Austin vigorously remonstrates. He says: "There may possibly be nations whose livelier feelings incline them more to gesticulation than is common among us, as there are also countries in which plants of excellent use

to man grow spontaneously; these, by care and culture, are found to thrive also in colder countries."

It is in general to be remarked that as the number of dialects in any district decreases so will the gestures, though doubtless there is also weight in the fact not merely that a language has been reduced to and modified by writing, but that people who are accustomed generally to read and write, as are the English and Germans, will after a time think and talk as they write, and without the accompaniments still persistent among Hindus, Arabs, and the less literate of European nations.

The fact that in the comparatively small island of Sicily gesture language has been maintained until the present time in a perfection not observed elsewhere in Europe must be considered in connection with the above remark on England's insularity, and it must also be admitted that several languages have prevailed in the latter, still leaving dialects. This apparent similarity of conditions renders the contrast as regards use of gestures more remarkable, yet there are some reasons for their persistence in Sicily which apply with greater force than to Great Britain. The explanation, through mere tradition, is that the common usage of signs dates from the time of Dionysius, the tyrant of Syracuse, who prohibited meetings and conversation among his subjects, under the direst penalties, so that they adopted that expedient to hold communication. It would be more useful to consider the peculiar history of the island. The Sicanians being its aborigines it was colonized by Greeks, who, as the Romans asserted, were still more apt at gesture than themselves. This colonization was also by separate bands of adventurers from several different states of Greece, so that they started with dialects and did not unite in a common or national organization, the separate cities and their territories being governed by oligarchies or tyrants frequently at war with each other, until, in the fifth century B. C., the Carthaginians began to contribute a new admixture of language and blood, followed by Roman, Vandal, Gothic, Herulian, Arab, and Norman subjugation. Thus some of the conditions above suggested have existed in this case, but, whatever the explanation, the accounts given by travelers of the extent to which the language of signs has been used even during the present generation are so marvelous as to deserve quotation. The one selected is from the pen of Alexandre Dumas, who, it is to be hoped, did not carry his genius for romance into a professedly sober account of travel:

"In the intervals of the acts of the opera I saw lively conversations carried on between the orchestra and the boxes. Arami, in particular, recognized a friend whom he had not seen for three years, and who related to him, by means of his eyes and his hands, what, to judge by the eager gestures of my companion, must have been matters of great interest. The conversation ended, I asked him if I might know without impropriety what was the intelligence which had seemed to interest him so deeply. 'O, yes,' he replied, 'that person is one of my good friends, who has been away from Palermo for three years, and he has been telling me that he was married at Naples; then traveled with his wife in

Austria and in France; there his wife gave birth to a daughter, whom he had the misfortune to lose; he arrived by steamboat yesterday, but his wife had suffered so much from sea-sickness that she kept her bed, and he came alone to the play.' 'My dear friend,' said I to Arami, 'if you would have me believe you, you must grant me a favor.' 'What is it?' said he. 'It is, that you do not leave me during the evening, so that I may be sure you give no instructions to your friend, and when we join him, that you ask him to repeat aloud what he said to you by signs.' 'That I will,' said Arami. The curtain then rose; the second act of Norma was played; the curtain falling, and the actors being recalled, as usual, we went to the side-room, where we met the traveler. 'My dear friend,' said Arami, 'I did not perfectly comprehend what you wanted to tell me; be so good as to repeat it.' The traveler repeated the story word for word, and without varying a syllable from the translation which Arami had made of his signs; it was marvelous indeed.

"Six weeks after this, I saw a second example of this faculty of mute communication. This was at Naples. I was walking with a young man of Syracuse. We passed by a sentinel. The soldier and my companion exchanged two or three grimaces, which at another time I should not even have noticed, but the instances I had before seen led me to give attention. 'Poor fellow,' sighed my companion. 'What did he say to you?' I asked. 'Well,' said he, 'I thought that I recognized him as a Sicilian, and I learned from him, as we passed, from what place he came; he said he was from Syracuse, and that he knew me well. Then I asked him how he liked the Neapolitan service; he said he did not like it at all, and if his officers did not treat him better he should certainly finish by deserting. I then signified to him that if he ever should be reduced to that extremity, he might rely upon me, and that I would aid him all in my power. The poor fellow thanked me with all his heart, and I have no doubt that one day or other I shall see him come.' Three days after, I was at the quarters of my Syracusan friend, when he was told that a man asked to see him who would not give his name; he went out and left me nearly ten minutes. 'Well,' said he, on returning, 'just as I said.' 'What?' said I. 'That the poor fellow would desert.'"

After this there is an excuse for believing the tradition that the revolt called "the Sicilian Vespers," in 1282, was arranged throughout the island without the use of a syllable, and even the day and hour for the massacre of the obnoxious foreigners fixed upon by signs only. Indeed, the popular story goes so far as to assert that all this was done by facial expression, without even manual signs.

NEAPOLITAN SIGNS.

It is fortunately possible to produce some illustrations of the modern Neapolitan sign language traced from the plates of De Jorio, with translations, somewhat condensed, of his descriptions and remarks.

In Fig. 76 an ambulant secretary or public writer is seated at his

FIG. 76.—Neapolitan public letter-writer and clients.

Fig. 78.—Neapolitan hot-corn vender.

little table, on which are the meager tools of his trade. He wears spectacles in token that he has read and written much, and has one seat at his side to accommodate his customers. On this is seated a married woman who asks him to write a letter to her absent husband. The secretary, not being told what to write about, without surprise, but somewhat amused, raises his left hand with the ends of the thumb and finger joined, the other fingers naturally open, a common sign for *inquiry*. "What shall the letter be about?" The wife, not being ready of speech, to rid herself of the embarrassment, resorts to the mimic art, and, without opening her mouth, tells with simple gestures all that is in her mind. Bringing her right hand to her heart, with a corresponding glance of the eyes she shows that the theme is to be *love*. For emphasis also she curves the whole upper part of her body towards him, to exhibit the intensity of her passion. To complete the mimic story, she makes with her left hand the sign of *asking* for something, which has been above described (see page 291). The letter, then, is to assure her husband of her love and to beg him to return it with corresponding affection. The other woman, perhaps her sister, who has understood the whole direction, regards the request as silly and fruitless and is much disgusted. Being on her feet, she takes a step toward the wife, who she thinks is unadvised, and raises her left hand with a sign of disapprobation. This position of the hand is described in full as open, raised high, and oscillated from right to left. Several of the Indian signs have the same idea of oscillation of the hand raised, often near the head, to express *folly*, *fool*. She clearly says, "What a thing to ask! what a fool you are!" and at the same time makes with the right hand the sign of *money*. This is made by the extremities of the thumb and index rapidly rubbed against each other, and is shown more clearly in Fig. 77. It is taken from the handling and counting of coin. This may be compared with an Indian sign, see Fig. 115, page 344.

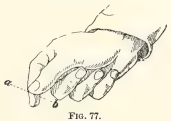

FIG. 77.

So the sister is clearly disapproving with her left hand and with her right giving good counsel, as if to say, in the combination, "What a fool you are to ask for his love; you had better ask him to send you some money."

In Naples, as in American cities, boiled ears of green corn are vended with much outcry. Fig. 78 shows a boy who is attracted by the local cry "*Pollanchelle tenerelle!*" and seeing the sweet golden ears still boiling in the kettle from which steams forth fragrance, has an ardent desire to taste the same, but is without a *soldo*. He tries begging. His right open hand is advanced toward the desired object with the sign of *asking* or *begging*, and he also raises his left forefinger to indicate the number *one*—"Pretty girl, please only give me one!" The pretty girl is by no means cajoled, and while her left hand holds the ladle ready to use if he

dares to touch her merchandise, she replies by gesture "*Te voglio dà no cuorno!*" freely translated, "I'll give you one *in a horn!*" This gesture is drawn with clearer outline in Fig. 79, and has many significations, according to the subject-matter and context, and also as applied to different parts of the body. Applied to the head it has allusion, descending from high antiquity, to a marital misfortune which was probably common in prehistoric times as well as the present. It is also often used as an amulet against the *jettatura* or evil eye, and misfortune in general, and directed toward another person is a prayerful wish for his or her preservation from evil. This use is ancient, as is shown on medals and statues, and is supposed by some to refer to the horns of animals slaughtered in sacrifice. The position of the fingers, Fig. 80, is also given as one of Quintilian's oratorical gestures by the words "*Duo quoque medii sub pollicem veniunt*," and is said by him to be vehement and connected with reproach or argument. In the present case, as a response to an impertinent or disagreeable petition, it simply means, "instead of giving what you ask, I will give you nothing but what is vile and useless, as horns are."

Fig. 79.

Fig. 80.

Fig. 81 tells a story which is substantially the foundation of the slender plot of most modern scenic pantomimes preliminary to the bursting forth from their chrysalides of Harlequin, Columbine, Pantaloon, and company. A young girl, with the consent of her parents, has for some time promised her hand to an honest youth. The old mother, in despite of her word, has taken a caprice to give her daughter to another suitor. The father, though much under the sway of his spouse, is in his heart desirous to keep his engagement, and has called in the notary to draw the contract. At this moment the scene begins, the actors of which, for greater perspicuity and brevity, may be provided with stage names as follows:

Cecca, diminutive for Francisca, the mother of—
Nanella, diminutive of Antoniella, the betrothed of—
Peppino, diminutive of Peppe, which is diminutive of Guiseppe.
Pasquale, husband of Cecca and father of Nanella.
Tonno, diminutive of Antonio, favored by Cecca.
D. Alfonso, notary.

Cecca tries to pick a quarrel with Peppino, and declares that the contract shall not be signed. He reminds her of her promise, and accuses her of breach of faith. In her passion she calls on her daughter to repudiate her lover, and casting her arms around her, commands her to make the sign of breaking off friendship—"*scocchiare*"—which she has herself made to Peppino, and which consists in extending the hand

FIG. 81.—Disturbance at signing of Neapolitan marriage contract.

FIG. 83.—Coming home of Neapolitan bride.

with the joined ends of finger and thumb before described, see Fig. 66, and then separating them, thus breaking the union. This the latter reluctantly pretends to do with one hand, yet with the other, which is concealed from her irate mother's sight, shows her constancy by continuing with emphatic pressure the sign of *love*. According to the gesture vocabulary, on the sign *scocchiare* being made to a person who is willing to accept the breach of former affection, he replies in the same manner, or still more forcibly by inserting the index of the other hand between the index and thumb of the first, thus showing the separation by the presence of a material obstacle. Simply refraining from holding out the hand in any responsive gesture is sufficient to indicate that the breach is not accepted, but that the party addressed desires to continue in friendship instead of resolving into enmity. This weak and inactive negative, however, does not suit Peppino's vivacity, who, placing his left hand on his bosom, makes, with his right, one of the signs for emphatic negation. This consists of the palm turned to the person addressed with the index somewhat extended and separated from the other fingers, the whole hand being oscillated from right to left. This gesture appears on ancient Greek vases, and is compound, the index being demonstrative and the negation shown by the horizontal oscillation, the whole being translatable as, "That thing I want not, won't have, reject." The sign is virtually the same as that made by Arapaho and Cheyenne Indians (see EXTRACTS FROM DICTIONARY, page 440, *infra.*). The conception of oscillation to show negation also appears with different execution in the sign of the Jicarilla Apaches and the Pai-Utes, Fig. 82. The same sign is reported from Japan, in the same sense.

FIG. 82.

Tonno, in hopes that the quarrel is definitive, to do his part in stopping the ceremony, proceeds to blow out the three lighted candles, which are an important traditional feature of the rite. The good old man Pasquale, with his hands extended, raised in surprised displeasure and directed toward the insolent youth, stops his attempt. The veteran notary, familiar with such quarrels in his experience, smiles at this one, and, continuing in his quiet attitude, extends his right hand placidly to Peppino with the sign of *adagio*, before described, see Fig. 68, advising him not to get excited, but to persist quietly, and all would be well.

Fig. 83 portrays the first entrance of a bride to her husband's house. She comes in with a tender and languid mien, her pendent arms indicating soft yielding, and the right hand loosely holds a handkerchief, ready to apply in case of overpowering emotion. She is, or feigns to be, so timid and embarrassed as to require support by the arm of a friend who introduces her. She is followed by a male friend of the family, whose joyful face is turned toward supposed by-standers, right hand pointing to the new acquisition, while with his left he makes the sign of horns before described, see Fig. 79, which in this connection is to wish pros-

perity and avert misfortune, and is equivalent to the words in the Neopolitan dialect, "*Mal'uocchie non uce pozzano*"—may evil eyes never have power over her.

The female confidant, who supports and guides her embarrassed friend with her right arm, brings her left hand into the sign of *beautiful*—"See what a beauty she is!" This sign is made by the thumb and index open and severally lightly touching each side of the lower cheek, the other fingers open. It is given on a larger scale and slightly varied in Fig. 84, evidently referring to a fat and rounded visage. Almost the same sign is made by the Ojibwas of Lake Superior, and a mere variant of it is made by the Dakotas—stroking the cheeks alternately down to the tip of the chin with the palm or surface of the extended fingers.

Fig. 84.

The mother-in-law greets the bride by making the sign *mano in fica* with her right hand. This sign, made with the hand clenched and the point of the thumb between and projecting beyond the fore and middle fingers, is more distinctly shown in Fig. 85. It has a very ancient origin, being found on Greek antiques that have escaped the destruction of time, more particularly in bronzes, and undoubtedly refers to the *pudendum muliebre*. It is used offensively and ironically, but also—which is doubtless the case in this instance—as an invocation or prayer against evil, being more forcible than the horn-shaped gesture before described. With this sign the Indian sign for *female*, see Fig. 132, page 357, *infra*, may be compared.

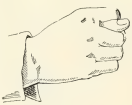

Fig. 85.

The mother-in-law also places her left hand hollowed in front of her abdomen, drawing with it her gown slightly forward, thereby making a pantomimic representation of the state in which "women wish to be who love their lords"; the idea being plainly an expressed hope that the household will be blessed with a new generation.

Next to her is a hunchback, who is present as a familiar clown or merrymaker, and dances and laughs to please the company, at the same time snapping his fingers. Two other illustrations of this action, the middle finger in one leaving and in the other having left the thumb and passed to its base, are seen in Figs. 86,87. This gesture by itself has, like others mentioned, a great variety of significations, but here means *joy* and acclamation. It is frequently used among us for subdued applause, less violent than clapping the two hands, but still oftener to express negation with disdain, and also carelessness. Both these uses of it are common in Naples, and appear in Etruscan vases and

Fig. 86.

Fig. 87.

Fig. 90.—The cheating Neapolitan chestnut huckster.

Fig. 89.—Quarrel between Neapolitan women.

Pompeian paintings, as well as in the classic authors. The significance of the action in the hand of the contemporary statue of Sardanapalus at Anchiale is clearly *worthlessness*, as shown by the inscription in Assyrian, "Sardanapalus, the son of Anacyndaraxes, built in one day Anchiale and Tarsus. Eat, drink, play; the rest is not worth *that!*"

The bridegroom has left his mother to do the honors to the bride, and himself attends to the rest of the company, inviting one of them to drink some wine by a sign, enlarged in Fig. 88, which is not merely pointing to the mouth with the thumb, but the hand with the incurved fingers represents the body of the common glass flask which the Neapolitans use, the extended thumb being its neck; the invitation is therefore specially to drink wine. The guest, however, responds by a very obvious gesture that he don't wish anything to drink, but he would like to eat some macaroni, the fingers being disposed as if handling that comestible in the fashion of vulgar Italians. If the idea were only to eat generally, it would have been expressed by the fingers and thumb united in a point and moved several times near and toward the mouth, not raised above it, as is necessary for suspending the strings of macaroni.

FIG. 88.

In Fig. 89 the female in the left of the group is much disgusted at seeing one of her former acquaintances, who has met with good fortune, promenade in a fine costume with her husband. Overcome with jealousy, she spreads out her dress derisively on both sides, in imitation of the hoop-skirts once worn by women of rank, as if to say "So you are playing the great lady!" The insulted woman, in resentment, makes with both hands, for double effect, the sign of horns, before described, which in this case is done obviously in menace and imprecation. The husband is a pacific fellow who is not willing to get into a woman's quarrel, and is very easily held back by a woman and small boy who happen to join the group. He contents himself with pretending to be in a great passion and biting his finger, which gesture may be collated with the emotional clinching of the teeth and biting the lips in anger, common to all mankind.

In Fig. 90 a contadina, or woman from the country, who has come to the city to sell eggs (shown to be such by her head-dress and the form of the basket which she has deposited on the ground), accosts a vender of roast chestnuts and asks for a measure of them. The chestnut huckster says they are very fine and asks a price beyond that of the market; but a boy sees that the rustic woman is not sharp in worldly matters and desires to warn her against the cheat. He therefore, at the moment when he can catch her eye, pretending to lean upon his basket, and moving thus a little behind the huckster, so as not to be seen, points him out with his index finger, and lays his left forefinger under his eye, pulling down the skin slightly, so as to deform the regularity of the lower

eyelid. This is a *warning against a cheat*, shown more clearly in Fig. 91. This sign primarily indicates a squinting person, and metaphorically one whose looks cannot be trusted, even as in a squinting person you cannot be certain in which direction he is looking.

FIG. 91.

Fig. 92 shows the extremities of the index and thumb closely joined in form of a cone, and turned down, the other fingers held at pleasure, and the hand and arm advanced to the point and held steady. This signifies *justice*, a just person, that which is just and right. The same sign may denote friendship, a menace, which specifically is that of being brought to justice, and snuff, *i. e.* powdered tobacco; but the expression of the countenance and the circumstance of the use of the sign determine these distinctions. Its origin is clearly the balance or emblem of justice, the office of which consists in ascertaining physical weight, and thence comes the moral idea of distinguishing clearly what is just and accurate and what is not. The hand is presented in the usual manner of holding the balance to weigh articles.

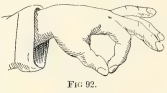

FIG 92.

a *b*

FIG. 93.

Fig. 93 signifies *little*, *small*, both as regards the size of physical objects or figuratively, as of a small degree of talent, affection, or the like. It is made either by the point of the thumb placed under the end of the index (*a*), or *vice versâ* (*b*), and the other fingers held at will, but separated from those mentioned. The intention is to exhibit a small portion either of the thumb or index separated from the rest of the hand. The gesture is found in Herculanean bronzes, with obviously the same signification. The signs made by some tribes of Indians for the same conception are very similar, as is seen by Figs. 94 and 95.

FIG. 94.

FIG. 95.

Fig. 96 is simply the index extended by itself. The other fingers are generally bent inwards and pressed down by the thumb, as mentioned by Quintilian, but that is not necessary to the gesture if the forefinger is distinctly separated from the rest. It is most commonly used for indication, pointing out, as it is over all the world, from which comes the name index, applied by the Romans as also by us, to the forefinger. In different relations to the several parts of the body and arm positions it has many significations, *e. g.*, attention, meditation, derision, silence, number, and demonstration in general.

FIG. 96.

Fig. 97 represents the head of a jackass, the thumbs being the ears, and the separation of the little from the third fingers showing the jaws.

Fig. 98 is intended to portray the head of the same animal in a front view, the hands being laid upon each other, with thumbs extending on each side to represent the ears. In each case the thumbs are generally moved forward and back, in the manner of the quadruped, which, without much apparent reason, has been selected as the emblem of stupidity. The sign, therefore, means *stupid*, *fool*. Another mode of executing the same conception—the ears of an ass—is shown in Fig. 99, where the end of the thumb is applied to the ear or temple and the hand is wagged up and down. Whether the ancient Greeks had the same low opinion of the ass as is now entertained is not clear, but they regarded long ears with derision, and Apollo, as a punishment to Midas for his foolish decision, bestowed on him the lengthy ornaments of the patient beast.

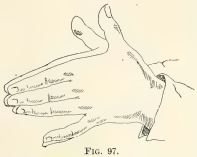

Fig. 97.

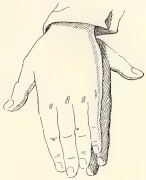

Fig. 98.

Fig. 99.

Fig. 100.

Fig. 100 is the fingers elongated and united in a point, turned upwards. The hand is raised slightly toward the face of the gesturer and shaken a few times in the direction of the person conversed with. This is *inquiry*, not a mere interrogative, but to express that the person addressed has not been clearly understood, perhaps from the vagueness or diffusiveness of his expressions. The idea appears to suggest the gathering of his thoughts together into one distinct expression, or to be *pointed* in what he wishes to say.

Fig. 101.

Crafty, *deceitful*, Fig. 101. The little fingers of both reversed hands are hooked together, the others open but slightly curved, and, with the hands, moved several times to the right and left. The gesture is intended to represent a crab and the tortuous movements of the crustacean, which are likened to those of a man who cannot be depended on in his walk through life. He is not straight.

Figs. 102 and 103 are different positions of the hand in which the approximating thumb and forefinger form a circle. This is the direst insult that can be given. The amiable canon De Jorio only hints at its special significance, but it may be evident to persons aware of a practice disgraceful to Italy. It is very ancient.

Fig. 104 is easily recognized as a request or command to be *silent*, either on the occasion or on the subject. The mouth, supposed to be forcibly closed, prevents speaking, and the natural gesture, as might be supposed, is historically ancient, but the instance, frequently adduced from the attitude of the god Harpokrates, whose finger is on his lips, is an error. The Egyptian hieroglyphists, notably in the designation of Horus, their dawn-god, used the finger in or on the lips for "child." It

Fig. 102.

Fig. 103.

Fig. 104.

has been conjectured in the last instance that the gesture implied, not the mode of taking nourishment, but inability to speak—*in-fans*. This conjecture, however, was only made to explain the blunder of the Greeks, who saw in the hand placed connected with the mouth in the hieroglyph of Horus (the) son, "Hor-(p)-chrot," the gesture familiar to themselves of a finger on the lips to express "silence," and so, mistaking both the name and the characterization, invented the God of Silence, Harpokrates. A careful examination of all the linear hieroglyphs given by Champollion (*Dictionnaire Egyptien*) shows that the finger or the hand to the mouth of an adult (whose posture is always distinct from that of a child) is always in connection with the positive ideas of voice, mouth, speech, writing, eating, drinking, &c., and never with the negative idea of silence. The special character for *child*, Fig. 105, always has the above-mentioned part of the sign with reference to nourishment from the breast.

Fig. 106 is a forcible *negation*. The outer ends of the fingers united in a point under the chin are violently thrust forward. This is the rejection of an idea or proposition, the same conception being executed in several different modes by the North American Indians.

Fig. 105.

Fig. 106.

Fig. 107 signifies *hunger*, and is made by extending the thumb and index under the open mouth and turning them horizontally and vertically several times. The idea is emptiness and desire to be filled. It is also expressed by beating the ribs with the flat hands, to show that the sides meet or are weak for the want of something between them.

Fig. 108 is made in mocking and ridicule. The open and oscillating

hand touches the point of the nose with that of the thumb. It has the particular sense of stigmatizing the person addressed or in question as a dupe. A credulous person is generally imagined with a gaping mouth and staring eyes, and as thrusting forward his face, with pendant chin, so that the nose is well advanced and therefore most prominent in the profile. A dupe is therefore called *naso lungo* or long-nose, and with Italian writers "*restare con un palmo di naso*"—to be left with a palm's length of nose—means to have met with loss, injury, or disappointment.

Fig. 107.

Fig. 108.

The thumb stroking the forehead from one side to the other, Fig. 109, is a natural sign of *fatigue*, and of the physical toil that produces fatigue. The wiping off of perspiration is obviously indicated. This gesture is often used ironically.

Fig. 109.

Fig. 110.

As a *dupe* was shown above, now the *duper* is signified, by Fig. 110. The gesture is to place the fingers between the cravat and the neck and rub the latter with the back of the hand. The idea is that the deceit is put within the cravat, taken in and down, similar to our phrase to "swallow" a false and deceitful story, and a "cram" is also an English slang word for an incredible lie. The conception of the slang term is nearly related to that of the Neapolitan sign, viz., the artificial enlargement of the œsophagus of the person victimized or on whom imposition is attempted to be practiced, which is necessary to take it down.

Fig. 111.

Fig. 111 shows the ends of the index and thumb stroking the two sides of the nose from base to point. This means *astute, attentive, ready.* Sharpness of the nasal organ is popularly associated with subtlety and finesse. The old Romans by *homo emunctæ naris* meant an acute man attentive to his interests. The sign is often used in a bad sense, then signifying *too* sharp to be trusted.

This somewhat lengthy but yet only partial list of Neapolitan gesture-signs must conclude with one common throughout Italy, and also among us with a somewhat different signification, yet perhaps also derived from classic times. To

express suspicion of a person the forefinger of the right hand is placed upon the side of the nose. It means *tainted*, not sound. It is used to give an unfavorable report of a person inquired of and to warn against such.

The Chinese, though ready in gesticulation and divided by dialects, do not appear to make general use of a systematic sign language, but they adopt an expedient rendered possible by the peculiarity of their written characters, with which a large proportion of their adults are acquainted, and which are common in form to the whole empire. The inhabitants of different provinces when meeting, and being unable to converse orally, do not try to do so, but write the characters of the words upon the ground or trace them on the palm of the hand or in the air. Those written characters each represent words in the same manner as do the Arabic or Roman numerals, which are the same to Italians, Germans, French, and English, and therefore intelligible, but if expressed in sound or written in full by the alphabet, would not be mutually understood. This device of the Chinese was with less apparent necessity resorted to in the writer's personal knowledge between a Hungarian who could talk Latin, and a then recent graduate from college who could also do so to some extent, but their pronunciation was so different as to occasion constant difficulty, so they both wrote the words on paper, instead of attempting to speak them.

The efforts at intercommunication of all savage and barbarian tribes, when brought into contact with other bodies of men not speaking an oral language common to both, and especially when uncivilized inhabitants of the same territory are separated by many linguistic divisions, should in theory resemble the devices of the North American Indians. They are not shown by published works to prevail in the Eastern hemisphere to the same extent and in the same manner as in North America. It is, however, probable that they exist in many localities, though not reported, and also that some of them survive after partial or even high civilization has been attained, and after changed environment has rendered their systematic employment unnecessary. Such signs may be, first, unconnected with existing oral language, and used in place of it; second, used to explain or accentuate the words of ordinary speech, or third, they may consist of gestures, emotional or not, which are only noticed in oratory or impassioned conversation, being, possibly, survivals of a former gesture language.

From correspondence instituted it may be expected that a considerable collection of signs will be obtained from West and South Africa, India, Arabia, Turkey, the Fiji Islands, Sumatra, Madagascar, Ceylon, and especially from Australia, where the conditions are similar in many respects to those prevailing in North America prior to the Columbian discovery. In the *Aborigines of Victoria, Melbourne*, 1878, by R. Brough Smythe. the author makes the following curious remarks: "It is believed that they have several signs, known only to themselves, or to those

among the whites who have had intercourse with them for lengthened periods, which convey information readily and accurately. Indeed, because of their use of signs, it is the firm belief of many (some uneducated and some educated) that the natives of Australia are acquainted with the secrets of Freemasonry."

In the *Report of the cruise of the United States Revenue steamer Corwin in the Arctic Ocean, Washington*, 1881, it appears that the Innuits of the northwestern extremity of America use signs continually. Captain Hooper, commanding that steamer, is reported by Mr. Petroff to have found that the natives of Nunivak Island, on the American side, below Behring Strait, trade by signs with those of the Asiatic coast, whose language is different. Humboldt in his journeyings among the Indians of the Orinoco, where many small isolated tribes spoke languages not understood by any other, found the language of signs in full operation. Spix and Martius give a similar account of the Puris and Coroados of Brazil.

It is not necessary to enlarge under the present heading upon the signs of deaf-mutes, except to show the intimate relation between sign language as practiced by them and the gesture signs, which, even if not "natural," are intelligible to the most widely separated of mankind. A Sandwich Islander, a Chinese, and the Africans from the slaver Amistad have, in published instances, visited our deaf-mute institutions with the same result of free and pleasurable intercourse; and an English deaf-mute had no difficulty in conversing with Laplanders. It appears, also, on the authority of Sibscota, whose treatise was published in 1670, that Cornelius Haga, ambassador of the United Provinces to the Sublime Porte, found the Sultan's mutes to have established a language among themselves in which they could discourse with a speaking interpreter, a degree of ingenuity interfering with the object of their selection as slaves unable to repeat conversation. A curious instance has also been reported to the writer of operatives in a large mill where the constant rattling of the machinery rendered them practically deaf during the hours of work and where an original system of gestures was adopted.

In connection with the late international convention, at Milan, of persons interested in the instruction of deaf-mutes which, in the enthusiasm of the members for the new system of artificial articulate speech, made war upon all gesture-signs, it is curious that such prohibition of gesture should be urged regarding mutes when it was prevalent to so great an extent among the speaking people of the country where the convention was held, and when the advocates of it were themselves so dependent on gestures to assist their own oratory if not their ordinary conversation. Artificial articulation surely needs the aid of significant gestures more, when in the highest perfection to which it can attain, than does oral speech in its own high development. The use of artificial speech is also necessarily confined to the oral language acquired by the interlocutors and throws away the advantage of universality possessed by signs.

USE BY MODERN ACTORS AND ORATORS.

Less of practical value can be learned of sign language, considered as a system, from the study of gestures of actors and orators than would appear without reflection. The pantomimist who uses no words whatever is obliged to avail himself of every natural or imagined connection between thought and gesture, and, depending wholly on the latter, makes himself intelligible. On the stage and the rostrum words are the main reliance, and gestures generally serve for rythmic movement and to display personal grace. At the most they give the appropriate representation of the general idea expressed by the words, but do not attempt to indicate the idea itself. An instance is recorded of the addition of significance to gesture when it is employed by the gesturer, himself silent, to accompany words used by another. Livius Andronicus, being hoarse, obtained permission to have his part sung by another actor while he continued to make the gestures, and he did so with much greater effect than before, as Livy, the historian, explains, because he was not impeded by the exertion of the voice; but the correct explanation probably is, because his attention was directed to ideas, not mere words.

GESTURES OF ACTORS.

To look at the performance of a play through thick glass or with closed ears has much the same absurd effect that is produced by also stopping the ears while at a ball and watching the apparently objectless capering of the dancers, without the aid of musical accompaniment. Diderot, in his *Lettre sur les sourds muets*, gives his experience as follows:

"I used frequently to attend the theater and I knew by heart most of our good plays. Whenever I wished to criticise the movements and gestures of the actors I went to the third tier of boxes, for the further I was from them the better I was situated for this purpose. As soon as the curtain rose, and the moment came when the other spectators disposed themselves to listen, I put my fingers into my ears, not without causing some surprise among those who surrounded me, who, not understanding, almost regarded me as a crazy man who had come to the play only not to hear it. I was very little embarrassed by their comments, however, and obstinately kept my ears closed as long as the action and gestures of the players seemed to me to accord with the discourse which I recollected. I listened only when I failed to see the appropriateness of the gestures. * * * There are few actors capable of sustaining such a test, and the details into which I could enter would be mortifying to most of them."

It will be noticed that Diderot made this test with regard to the appropriate gestural representation of plays that he knew by heart, but if he had been entirely without any knowledge of the plot, the difficulty in his comprehending it from gestures alone would have been enormously increased. When many admirers of Ristori, who were wholly unac-

quainted with the language in which her words were delivered, declared that her gesture and expression were so perfect that they understood every sentence, it is to be doubted if they would have been so delighted if they had not been thoroughly familiar with the plots of Queen Elizabeth and Mary Stuart. This view is confirmed by the case of a deaf-mute, told to the writer by Professor FAY, who had prepared to enjoy Ristori's acting by reading in advance the advertised play, but on his reaching the theater another play was substituted and he could derive no idea from its presentation. The experience of the present writer is that he could gain very little meaning in detail out of the performance at a Chinese theater, where there is much more true pantomime than in the European, without a general notion of the subject as conveyed from time to time by an interpreter. A crucial test on this subject was made at the representation at Washington, in April, 1881, of *Frou-Frou* by Sarah Bernhardt and the excellent French company supporting her. Several persons of special intelligence and familiar with theatrical performances, but who did not understand spoken French, and had not heard or read the play before or even seen an abstract of it, paid close attention to ascertain what they could learn of the plot and incidents from the gestures alone. This could be determined in the special play the more certainly as it is not founded on historic events or any known facts. The result was that from the entrance of the heroine during the first scene in a peacock-blue riding habit to her death in a black walking-suit, three hours or five acts later, none of the students formed any distinct conception of the plot. This want of apprehension extended even to uncertainty whether *Gilberte* was married or not; that is, whether her adventures were those of a disobedient daughter or a faithless wife, and, if married, which of the half dozen male personages was her husband. There were gestures enough, indeed rather a profusion of them, and they were thoroughly appropriate to the words (when those were understood) in which fun, distress, rage, and other emotions were expressed, but in no cases did they interpret the motive for those emotions. They were the dressing for the words of the actors as the superb millinery was that of their persons, and perhaps acted as varnish to bring out dialogues and soliloquies in heightened effect. But though varnish can bring into plainer view dull or faded characters, it cannot introduce into them significance where none before existed. The simple fact was that the gestures of the most famed histrionic school, the Comédie Française, were not significant, far less self-interpreting, and though praised as the perfection of art, have diverged widely from nature. It thus appears that the absence of absolute self-interpretation by gesture is by no means confined to the lower grade of actors, such as are criticised in the old lines:

> When to enforce some very tender part
> His left hand sleeps by instinct on the heart;
> His soul, of every other thought bereft,
> Seems anxious only—where to place the left!

Without relying wholly upon the facts above mentioned, it will be admitted upon reflection that however numerous and correct may be the actually significant gestures made by a great actor in the representation of his part, they must be in small proportion to the number of gestures not at all significant, and which are no less necessary to give to his declamation precision, grace, and force. Significant gestures on the stage may be regarded in the nature of high seasoning and ornamentation, which by undue use defeat their object and create disgust. Histrionic perfection is, indeed, more shown in the slight shades of movement of the head, glances of the eye, and poises of the body than in violent attitudes; but these slight movements are wholly unintelligible without the words uttered with them. Even in the expression of strong emotion the same gesture will apply to many and utterly diverse conditions of fact. The greatest actor in telling that his father was dead can convey his grief with a shade of difference from that which he would use if saying that his wife had run away, his son been arrested for murder, or his house burned down; but that shade would not without words inform any person, ignorant of the supposed event, which of the four misfortunes had occurred. A true sign language, however, would fully express the exact circumstances, either with or without any exhibition of the general emotion appropriate to them.

Even among the best sign-talkers, whether Indian or deaf-mute, it is necessary to establish some *rapport* relating to theme or subject-matter, since many gestures, as indeed is the case in a less degree with spoken words, have widely different significations, according to the object of their exhibition, as well as the context. Panurge (*Pantagruel*, Book III, ch. xix) hits the truth upon this point, however ungallant in his application of it to the fair sex. He is desirous to consult a dumb man, but says it would be useless to apply to a woman, for "whatever it be that they see they do always represent unto their fancies, and imagine that it hath some relation to love. Whatever signs, shows, or gestures we shall make, or whatever our behavior, carriage, or demeanor shall happen to be in their view and presence, they will interpret the whole in reference to androgynation." A story is told to the same point by Guevara, in his fabulous life of the Emperor Marcus Aurelius. A young Roman gentleman encountering at the foot of Mount Celion a beautiful Latin lady, who from her very cradle had been deaf and dumb, asked her in gesture what senators in her descent from the top of the hill she had met with, going up thither. She straightway imagined that he had fallen in love with her and was eloquently proposing marriage, whereupon she at once threw herself into his arms in acceptance. The experience of travelers on the Plains is to the same general effect, that signs commonly used to men are understood by women in a sense so different as to occasion embarrassment. So necessary was it to strike the mental key-note of the spectators by adapting their minds to time, place, and circumstance, that even in the palmiest days of pantomime

it was customary for the crier to give some short preliminary explanation of what was to be acted, which advantage is now retained by our play-bills, always more specific when the performance is in a foreign language, unless, indeed, the management is interested in the sale of librettos.

GESTURES OF OUR PUBLIC SPEAKERS.

If the scenic gestures are so seldom significant, those appropriate to oratory are of course still less so. They require energy, variety, and precision, but also a degree of simplicity which is incompatible with the needs of sign language. As regards imitation, they are restrained within narrow bounds and are equally suited to a great variety of sentiments. Among the admirable illustrations in Austin's *Chironomia* of gestures applicable to the several passages in Gay's "Miser and Plutus" one is given for "But virtue's sold" which is perfectly appropriate, but is not in the slightest degree suggestive either of virtue or of the transaction of sale. It could be used for an indefinite number of thoughts or objects which properly excited abhorrence, and therefore without the words gives no special interpretation. Oratorical delivery demands general grace—cannot rely upon the emotions of the moment for spontaneous appropriateness, and therefore requires preliminary study and practice, such as are applied to dancing and fencing with a similar object; indeed, accomplishment in both dancing and fencing has been recommended as of use to all orators. In reference to this subject a quotation from Lord Chesterfield's letters is in place: "I knew a young man, who, being just elected a member of Parliament, was laughed at for being discovered, through the key-hole of his chamber door, speaking to himself in the glass and forming his looks and gestures. I could not join in that laugh, but, on the contrary, thought him much wiser than those that laughed at him, for he knew the importance of those little graces in a public assembly and they did not."

OUR INDIAN CONDITIONS FAVORABLE TO SIGN LANGUAGE.

In no other thoroughly explored part of the world has there been found spread over so large a space so small a number of individuals divided by so many linguistic and dialectic boundaries as in North America. Many wholly distinct tongues have for an indefinitely long time been confined to a few scores of speakers, verbally incomprehensible to all others on the face of the earth who did not, from some rarely operating motive, laboriously acquire their language. Even when the American race, so styled, flourished in the greatest population of which we have any evidence (at least according to the published views of the present writer, which seem to have been generally accepted), the immense number of languages and dialects still preserved, or known by

early recorded fragments to have once existed, so subdivided it that only the dwellers in a very few villages could talk together with ease. They were all interdistributed among unresponsive vernaculars, each to the other being *bar-bar-ous* in every meaning of the term. The number of known stocks or families of Indian languages within the territory of the United States amounts now to sixty-five, and these differ among themselves as radically as each differs from the Hebrew, Chinese, or English. In each of these linguistic families there are several, sometimes as many as twenty, separate languages, which also differ from each other as much as do the English, French, German, and Persian divisions of the Aryan linguistic stock.

The use of gesture-signs, continued, if not originating, in necessity for communication with the outer world, became entribally convenient from the habits of hunters, the main occupation of all savages, depending largely upon stealthy approach to game, and from the sole form of their military tactics—to surprise an enemy. In the still expanse of virgin forests, and especially in the boundless solitudes of the great plains, a slight sound can be heard over a large area, that of the human voice being from its rarity the most startling, so that it is now, as it probably has been for centuries, a common precaution for members of a hunting or war party not to speak together when on such expeditions, communicating exclusively by signs. The acquired habit also exhibits itself not only in formal oratory and in impassioned or emphatic conversation, but also as a picturesque accompaniment to ordinary social talk. Hon. LEWIS H. MORGAN mentions in a letter to this writer that he found a silent but happy family composed of an Atsina (commonly called Gros Ventre of the Prairie) woman, who had been married two years to a Frenchman, during which time they had neither of them attempted to learn each other's language; but the husband having taken kindly to the language of signs, they conversed together by that means with great contentment. It is also often resorted to in mere laziness, one gesture saving many words. The gracefulness, ingenuity, and apparent spontaneity of the greater part of the signs can never be realized until actually witnessed, and their beauty is much heightened by the free play to which the arms of these people are accustomed, and the small and well-shaped hands for which they are remarkable. Among them can seldom be noticed in literal fact—

> The graceless action of a heavy hand—

which the Bastard metaphorically condemns in King John.

The conditions upon which the survival of sign language among the Indians has depended is well shown by those attending its discontinuance among certain tribes.

Many instances are known of the discontinuance of gesture speech with no development in the native language of the gesturers, but from the invention for intercommunication of one used in common. The

Kalapuyas of Southern Oregon until recently used a sign language, but have gradually adopted for foreign intercourse the composite tongue, commonly called the Tsinuk or Chinook jargon, which probably arose for trade purposes on the Columbia River before the advent of Europeans, founded on the Tsinuk, Tsihali, Nutka, &c., but now enriched by English and French terms, and have nearly forgotten their old signs. The prevalence of this mongrel speech, originating in the same causes that produced the pigeon-English or *lingua-franca* of the Orient, explains the marked scantiness of sign language among the tribes of the Northwest coast.

Where the Chinook jargon has not extended on the coast to the North, the Russian language commences, used in the same manner, but it has not reached so deeply into the interior of the continent as the Chinook, which has been largely adopted within the region bounded by the eastern line of Oregon and Washington, and has become known even to the Pai-Utes of Nevada. The latter, however, while using it with the Oregonian tribes to their west and north, still keep up sign language for communication with the Banaks, who have not become so familiar with the Chinook. The Alaskan tribes on the coast also used signs not more than a generation ago, as is proved by the fact that some of the older men can yet converse by this means with the natives of the interior, whom they occasionally meet. Before the advent of the Russians the coast tribes traded their dried fish and oil for the skins and paints of the eastern tribes by visiting the latter, whom they did not allow to come to the coast, and this trade was conducted mainly in sign language. The Russians brought a better market, so the travel to the interior ceased, and with it the necessity for the signs, which therefore gradually died out, and are little known to the present generation on the coast, though still continuing in the interior, where the inhabitants are divided by dialects.

No explanation is needed for the disuse of a language of signs for the special purpose now in question when the speech of surrounding civilization is recognized as necessary or important to be acquired, and gradually becomes known as the best common medium, even before it is actually spoken by many individuals of the several tribes. When it has become general, signs, as systematically employed before, gradually fade away.

THEORIES ENTERTAINED RESPECTING INDIAN SIGNS.

In this paper it is not designed to pronounce upon theories, and certainly none will be advocated in a spirit of dogmatism. The writer recognizes that the subject in its novelty specially requires an objective and not a subjective consideration. His duty is to collect the facts as they are, and this as soon as possible, since every year will add to the

confusion and difficulty. After the facts are established the theories will take care of themselves, and their final enunciation will be in the hands of men more competent than the writer will ever pretend to be, although his knowledge, after careful study of all data attainable, may be considerably increased. The mere collection of facts, however, cannot be prosecuted to advantage without predetermined rules of judgment, nor can they be classified at all without the adoption of some principle which involves a tentative theory. More than a generation ago Baader noticed that scientific observers only accumulated great masses of separate facts without establishing more connection between them than an arbitrary and imperfect classification; and before him Goethe complained of the indisposition of students of nature to look upon the universe as a whole. But since the great theory of evolution has been brought to general notice no one will be satisfied at knowing a fact without also trying to establish its relation to other facts. Therefore a working hypothesis, which shall not be held to with tenacity, is not only allowable but necessary. It is also important to examine with proper respect the theories advanced by others. Some of these, suggested in the few publications on the subject and also by correspondents, will be mentioned.

NOT CORRELATED WITH MEAGERNESS OF LANGUAGE.

The story has been told by travelers in many parts of the world that various languages cannot be clearly understood in the dark by their possessors, using their mother tongue between themselves. The evidence for this anywhere is suspicious; and when it is asserted, as it often has been, in reference to some of the tribes of North American Indians, it is absolutely false, and must be attributed to the error of travelers who, ignorant of the dialect, never see the natives except when trying to make themselves intelligible to their visitors by a practice which they have found by experience to have been successful with strangers to their tongue, or perhaps when they are guarding against being overheard by others. Captain Burton, in his *City of the Saints*, specially states that the Arapahos possess a very scanty vocabulary, pronounced in a quasi-unintelligible way, and can hardly converse with one another in the dark. The truth is that their vocabulary is by no means scanty, and they do converse with each other with perfect freedom without any gestures when they so please. The difficulty in speaking or understanding their language is in the large number of guttural and interrupted sounds which are not helped by external motions of the mouth and lips in articulation, and the light gives little advantage to its comprehension so far as concerns the vocal apparatus, which, in many languages, can be seen as well as heard, as is proved by the modern deaf-mute practice of artificial speech. The corresponding story that no white man ever learned Arapaho is also false. A member of Frémont's party so long ago as 1842 spoke the language. Burton in the same connection

gives a story "of a man who, being sent among the Cheyennes to qualify himself for interpreting, returned in a week and proved his competency; all he did, however, was to go through the usual pantomime with a running accompaniment of grunts." And he might as well have omitted the grunts, for he obviously only used sign language. Lieutenant Abert, in 1846–'47, made much more sensible remarks from his actual observation than Captain Burton repeated at second-hand from a Mormon met by him at Salt Lake. He said: "Some persons think that it [the Cheyenne language] would be incomplete without gesture, because the Indians use gestures constantly. But I have been assured that the language is in itself capable of bodying forth any idea to which one may wish to give utterance."

In fact, individuals of those American tribes specially instanced in these reports as unable to converse without gesture, often, in their domestic *abandon*, wrap themselves up in robes or blankets with only breathing holes before the nose, so that no part of the body is seen, and chatter away for hours, telling long stories. If in daylight they thus voluntarily deprive themselves of the possibility of making signs, it is clear that their preference for talks around the fire at night is explicable by very natural reasons wholly distinct from the one attributed. The inference, once carelessly made from the free use of gesture by some of the Shoshonian stock, that their tongue was too meager for use without signs, is refuted by the now ascertained fact that their vocabulary is remarkably copious and their parts of speech better differentiated than those of many people on whom no such stigma has been affixed. The proof of this was seen in the writer's experience, when Ouray, the head chief of the Utes, was at Washington, in the early part of 1880, and after an interview with the Secretary of the Interior made report of it to the rest of the delegation who had not been present. He spoke without pause in his own language for nearly an hour, in a monotone and without a single gesture. The reason for this depressed manner was undoubtedly because he was very sad at the result, involving loss of land and change of home; but the fact remains that full information was communicated on a complicated subject without the aid of a manual sign, and also without even such change of inflection of voice as is common among Europeans. All theories based upon the supposed poverty of American languages must be abandoned.

The grievous accusation against foreign people that they have no intelligible language is venerable and general. With the Greeks the term ἄγλωσσος, "tongueless," was used synonymous with βάρβαρος, "barbarian" of all who were not Greek. The name "Slav," assumed by a grand division of the Aryan family, means "the speaker," and is contradistinguished from the other peoples of the world, such as the Germans, who are called in Russian "Njemez," that is, "speechless." In Isaiah (xxxiii, 19) the Assyrians are called a people "of a stammering tongue, that one cannot understand." The common use of the expres-

sion "tongueless" and "speechless," so applied, has probably given rise, as TYLOR suggests, to the mythical stories of actually speechless tribes of savages, and the considerations and instances above presented tend to discredit the many other accounts of languages which are incomplete without the help of gesture. The theory that sign language was in whole or in chief the original utterance of mankind would be strongly supported by conclusive evidence to the truth of such travelers' tales, but does not depend upon them. Nor, considering the immeasurable period during which, in accordance with modern geologic views, man has been on the earth, is it probable that any existing races can be found in which speech has not obviated the absolute necessity for gesture in communication among themselves. The signs survive for convenience, used together with oral language, and for special employment when language is unavailable.

A comparison sometimes drawn between sign language and that of our Indians, founded on the statement of their common poverty in abstract expressions, is not just to either. This paper will be written in vain if it shall not suggest the capacities of gesture speech in that regard, and a deeper study into Indian tongues has shown that they are by no means so confined to the concrete as was once believed.

ITS ORIGIN FROM ONE TRIBE OR REGION.

Col. Richard I. Dodge, United States Army, whose long experience among the Indians entitles his opinion to great respect, says in a letter:

"The embodiment of signs into a systematic language is, I believe, confined to the Indians of the Plains. Contiguous tribes gain, here and there, a greater or less knowledge of this language; these again extend the knowledge, diminished and probably perverted, to their neighbors, until almost all the Indian tribes of the United States east of the Sierras have some little smattering of it. The Plains Indians believe the Kiowas to have invented the sign language, and that by them its use was communicated to other Plains tribes. If this is correct, analogy would lead us to believe that those tribes most nearly in contact with the Kiowas would use it most fluently and correctly, the knowledge becoming less as the contact diminishes. Thus the Utes, though nearly contiguous (in territory) to the Plains Indians, have only the merest 'picked up' knowledge of this language, and never use it among themselves, simply because, they and the Plains tribes having been, since the memory of their oldest men, in a chronic state of war, there has been no social contact."

In another communication Colonel Dodge is still more definite:

"The Plains Indians themselves believe the sign language was invented by the Kiowas, who holding an intermediate position between the Comanches, Tonkaways, Lipans, and other inhabitants of the vast plains of Texas, and the Pawnees, Sioux, Blackfeet, and other northern tribes, were the general go-betweens, trading with all, making peace or war

with or for any or all. It is certain that the Kiowas are at present more universally proficient in this language than any other Plains tribe. It is also certain that the tribes furthest away from them and with whom they have least intercourse use it with least facility."

Dr. William H. Corbusier, assistant surgeon United States Army, a valued contributor, gives information as follows:

"The traditions of the Indians point toward the south as the direction from which the sign language came. They refer to the time when they did not use it; and each tribe say they learned it from those south of them. The Comanches, who acquired it in Mexico, taught it to the Arapahoes and Kiowas, and from these the Cheyennes learned it. The Sioux say that they had no knowledge of it before they crossed the Missouri River and came in contact with the Cheyennes, but have quite recently learned it from them. It would thus appear that the Plains Indians did not invent it, but finding it adapted to their wants adopted it as a convenient means of communicating with those whose language they did not understand, and it rapidly spread from tribe to tribe over the Plains. As the sign language came from Mexico, the Spaniards suggest themselves as the introducers of it on this continent. They are adepts in the use of signs. Cortez as he marched through Mexico would naturally have resorted to signs in communicating with the numerous tribes with which he came in contract. Finding them very necessary, one sign after another would suggest itself and be adopted by Spaniards and Indians, and, as the former advanced, one tribe after another would learn to use them. The Indians on the Plains, finding them so useful, preserved them and each tribe modified them to suit their convenience, but the signs remained essentially the same. The Shoshones took the sign language with them as they moved northwest, and a few of the Piutes may have learned it from them, but the Piutes as a tribe do not use it."

Mr. Ben. Clarke, the respected and skillful interpreter at Fort Reno writes to the same general effect:

"The Cheyennes think that the sign language used by the Cheyennes, Arapahoes, Ogallala and Brulé Sioux, Kiowas, and Comanches originated with the Kiowas. It is a tradition that, many years ago, when the Northern Indians were still without horses, the Kiowas often raided among the Mexican Indians and captured droves of horses on these trips. The Northern Plains Indians used to journey to them and trade for horses. The Kiowas were already proficient in signs, and the others learned from them. It was the journeying to the South that finally divided the Cheyennes, making the Northern and Southern Cheyennes. The same may be said of the Arapahoes. That the Kiowas were the first sign talkers is only a tradition, but as a tribe they are now considered to be the best or most thorough of the Plains Indians."

Without engaging in any controversy on this subject it may be noticed that the theory advanced supposes a comparatively recent origin of sign

language from one tribe and one region, whereas, so far as can be traced, the conditions favorable to a sign language existed very long ago and were co-extensive with the territory of North America occupied by any of the tribes. To avoid repetition reference is made to the discussion below under the heads of universality, antiquity, identity, and permanence. At this point it is only desired to call attention to the ancient prevalence of signs among tribes such as the Iroquois, Wyandot, Ojibwa, and at least three generations back among the Crees beyond our northern boundary and the Mandans and other far-northern Dakotas, not likely at that time to have had communication, even through intertribal channels, with the Kaiowas. It is also difficult to understand how their signs would have in that manner reached the Kutchin of Eastern Alaska and the Kutine and Selish of British Columbia, who use signs now. At the same time due consideration must be given to the great change in the intercommunication of tribes, produced by the importation of the horse, by which the habits of those Indians now, but not very anciently, inhabiting the Plains were entirely changed. It is probable that a sign language before existing became, contemporaneously with nomadic life, cultivated and enriched.

As regards the Spanish origin suggested, there is ample evidence that the Spaniards met signs in their early explorations north of and in the northern parts of Mexico, and availed themselves of them but did not introduce them. It is believed also that the elaborate picture writing of Mexico was founded on gesture signs.

With reference to the statement that the Kaiowas are the most expert sign talkers of the Plains, a number of authorities and correspondents give the precedence to the Cheyennes, and an equal number to the Arapahos. Probably the accident of meeting specially skillful talkers in the several tribes visited influences such opinions.

The writer's experience, both of the Utes and Pai-Utes, is different from the above statement respecting the absence of signs among them. They not only use their own signs but fully understand the difference between the signs regarded as their own and those of the Kaiowas. On special examination they understood some of the latter only as words of a foreign language interpolated in an oral conversation would be comprehended from the context, and others they would recognize as having seen before among other tribes without adoption. The same is true regarding the Brulé Sioux, as was clearly expressed by Medicine Bull, their chief. The Pimas, Papagos, and Maricopas examined had a copious sign language, yet were not familiar with many Kaiowa signs presented to them.

Instead of referring to a time past when they did not use signs, the Indians examined by the writer and by most of his correspondents speak of a time when they and their fathers used it more freely and copiously than at present, its disuse being from causes before mentioned. It, however, may be true in some cases that a tribe, having been for a long time in contact only with others the dialect of which was so nearly

akin as to be comprehensible, or from any reason being separated from those of a strange speech, discontinued sign-language for a time, and then upon migration or forced removal came into circumstances where it was useful, and revived it. It is asserted that some of the Muskoki and the Ponkas now in the Indian Territory never saw sign language until they arrived there. Yet there is some evidence that the Muskoki did use signs a century ago, and some of the Ponkas still remaining on their old homes on the Missouri remember it and have given their knowledge to an accurate correspondent, Rev. J. O. Dorsey, though for many years they have not been in circumstances to require its employment.

Perhaps the most salutary criticism to be offered regarding the theory would be in the form of a query whether sign language has ever been invented by any one body of people at any one time, and whether it is not simply a phase in evolution, surviving and reviving when needed. Criticism on this subject is made reluctantly, as it would be highly interesting to determine that sign language on this continent came from a particular stock, and to ascertain that stock. Such research would be similar to that into the Aryan and Semitic sources to which many modern languages have been traced backwards from existing varieties, and if there appear to be existing varieties in signs their roots may still be found to be *sui generis*. The possibility that the discrepancy between signs was formerly greater than at present will receive attention in discussing the distinction between the identity of signs and their common use as an art. It is sufficient to add now that not only does the burden of proof rest unfavorably upon the attempt to establish one parent stock for sign language in North America, but it also comes under the stigma now fastened upon the immemorial effort to name and locate the original oral speech of man. It is only next in difficulty to the old persistent determination to decide upon the origin of the whole Indian "race," in which most peoples of antiquity in the eastern hemisphere, including the lost tribes of Israel, the Gipsies, and the Welsh, have figured conspicuously as putative parents.

IS THE INDIAN SYSTEM SPECIAL AND PECULIAR?

This inquiry is closely connected with the last. If the system of signs was invented here in the correct sense of that term, and by a known and existing tribe, it is probable that it would not be found prevailing in any important degree where the influence of the inventors could not readily have penetrated. An affirmative answer to the question also presupposes the same answer to another question, viz, whether there is any one uniform system among the North American Indians which can therefore be compared with any other system. This last inquiry will be considered in its order. In comparing the system as a whole with others, the latter are naturally divided into signs of speaking men foreign to America and those of deaf-mutes.

COMPARISONS WITH FOREIGN SIGNS.

The generalization of TYLOR that "gesture language is substantially the same among savage tribes all over the world," interpreted by his remarks in another connection, is understood as referring to their common use of signs, and of signs formed on the same principles, but not of precisely the same signs to express the same ideas. In this sense of the generalization the result of the writer's study not only sustains it, but shows a surprising number of signs for the same idea which are substantially identical, not only among savage tribes, but among all peoples that use gesture signs with any freedom. Men, in groping for a mode of communication with each other, and using the same general methods, have been under many varying conditions and circumstances which have determined differently many conceptions and their semiotic execution, but there have also been many of both which were similar. Our Indians have no special superstition concerning the evil-eye like the Italians, nor have they been long familiar with the jackass so as to make him emblematical of stupidity; therefore signs for these concepts are not cisatlantic, but even in this paper many are shown which are substantially in common between our Indians and Italians. The large collection already obtained, but not now published, shows many others identical, not only with those of the Italians and the classic Greeks and Romans, but of other peoples of the Old World, both savage and civilized. The generic uniformity is obvious, while the occasion of specific varieties can be readily understood.

COMPARISON WITH DEAF-MUTE SIGNS.

The Indians who have been shown over the civilized East have often succeeded in holding intercourse, by means of their invention and application of principles in what may be called the voiceless mother utterance, with white deaf-mutes, who surely have no semiotic code more nearly connected with that attributed to the plain-roamers than is derived from their common humanity. They showed the greatest pleasure in meeting deaf-mutes, precisely as travelers in a foreign country are rejoiced to meet persons speaking their language, with whom they can hold direct communication without the tiresome and often suspected medium of an interpreter. When they met together they were found to pursue the same course as that noticed at the meeting of deaf-mutes who were either not instructed in any methodical dialect or who had received such instruction by different methods. They often disagreed in the signs at first presented, but soon understood them, and finished by adopting some in mutual compromise, which proved to be those most strikingly appropriate, graceful, and convenient; but there still remained in some cases a plurality of fitting signs for the same idea or object. On one of the most interesting of these occasions, at the Pennsylvania Institution for the Deaf and Dumb, in 1873, it was remarked that the signs of the deaf-mutes were much more readily understood

by the Indians, who were Absaroka or Crows, Arapahos, and Cheyennes, than were theirs by the deaf-mutes, and that the latter greatly excelled in pantomimic effect. This need not be surprising when it is considered that what is to the Indian a mere adjunct or accomplishment is to the deaf-mute the natural mode of utterance, and that there is still greater freedom from the trammel of translating words into action—instead of acting the ideas themselves—when, the sound of words being unknown, they remain still as they originated, but another kind of sign, even after the art of reading is acquired, and do not become entities as with us. The "action, action, action," of Demosthenes is their only oratory, not the mere heightening of it, however valuable.

On March 6, 1880, the writer had an interesting experience in taking to the National Deaf-Mute College at Washington seven Utes (which tribe, according to report, is unacquainted with sign language), among whom were Augustin, Alejandro, Jakonik, Severio, and Wash. By the kind attention of President GALLAUDET a thorough test was given, an equal number of deaf-mute pupils being placed in communication with the Indians, alternating with them both in making individual signs and in telling narratives in gesture, which were afterwards interpreted in speech by the Ute interpreter and the officers of the college. Notes of a few of them were taken, as follows:

Among the signs was that for *squirrel*, given by a deaf-mute. The right hand was placed over and facing the left, and about four inches above the latter, to show the height of the animal; then the two hands were held edgewise and horizontally in front, about eight inches apart (showing *length*); then imitating the grasping of a small object and biting it rapidly with the incisors, the extended index was pointed upward and forward (*in a tree*).

This was not understood, as the Utes have no sign for the tree squirrel, the arboreal animal not being now found in their region.

Deaf-mute sign for *jack-rabbit*: The first two fingers of each hand extended (the remaining fingers and thumbs closed) were placed on either side of the head, pointing upward; then arching the hands, palm down, quick, interrupted, jumping movements forward were made.

This was readily understood.

The signs for the following narrative were given by a deaf-mute: When he was a boy he mounted a horse without either bridle or saddle, and as the horse began to go he grasped him by the neck for support; a dog flew at the horse, began to bark, when the rider was thrown off and considerably hurt.

In this the sign for *dog* was as follows: Pass the arched hand forward from the lower part of the face, to illustrate elongated nose and mouth, then with both forefingers extended, remaining fingers and thumbs closed, place them upon either side of the lower jaw, pointing upward, to show lower canines, at the same time accompanying the gesture with an expression of withdrawing the lips so as to show the teeth snarling;

then, with the fingers of the right hand extended and separated throw them quickly forward and slightly upward (*voice* or *talking*).

This sign was understood to mean *bear*, as that for *dog* is different among the Utes, *i. e.*, by merely showing the height of the dog and pushing the flat hand forward, finger-tips first.

Another deaf-mute gestured to tell that when he was a boy he went to a melon-field, tapped several melons, finding them to be green or unripe; finally reaching a good one he took his knife, cut a slice, and ate it. A man made his appearance on horseback, entered the patch on foot, found the cut melon, and detecting the thief, threw the melon towards him, hitting him in the back, whereupon he ran away crying. The man mounted and rode off in an opposite direction.

All of these signs were readily comprehended, although some of the Indians varied very slightly in their translation.

When the Indians were asked whether, if they (the deaf-mutes) were to come to the Ute country they would be scalped, the answer was given, "Nothing would be done to you; but we would be friends," as follows:

The palm of the right hand was brushed toward the right over that of the left (*nothing*), and the right hand made to grasp the palm of the left, thumbs extended over and lying upon the back of the opposing hand.

This was readily understood by the deaf-mutes.

Deaf-mute sign of milking a cow and drinking the milk was fully and quickly understood.

The narrative of a boy going to an apple-tree, hunting for ripe fruit and filling his pockets, being surprised by the owner and hit upon the head with a stone, was much appreciated by the Indians and completely understood.

A deaf-mute asked Alejandro how long it took him to come to Washington from his country. He replied by placing the index and second finger of the right hand astride the extended forefinger (others closed) of the left; then elevating the fingers of the left hand (except thumb and forefinger) back forward (*three*); then extending the fingers of both hands and bringing them to a point, thumbs resting on palmar sides and extended, placing the hands in front of the body, the tips opposite the opposing wrist, and about four inches apart; then, revolving them in imitation of *wheels*, he elevated the extended forefinger of the left hand (*one*); then placing the extended flat hands, thumbs touching, the backs sloping downward towards the respective right and left sides, like the roof of a house; then repeating the sign of wheels as in the preceding, after which the left hand was extended before the body, fingers toward the right, horizontal, palm down and slightly arched, the right wrist held under it, the fingers extending upward beyond it, and quickly and repeatedly snapped upward (*smoke*); the last three signs being *covered—wagon—smoke, i. e. cars*; then elevating four fingers of the left hand (*four*).

Translation.—Traveled three days on horseback, one in a wagon, and four in the cars.

The deaf-mutes understood all but the sign for wheel, which they make as a large circle, with *one* hand.

Another example: A deaf-mute pretended to hunt something; found birds, took his bow and arrows and killed several.

This was fully understood.

A narrative given by Alejandro was also understood by the deaf-mutes, to the effect that he made search for deer, shot one with a gun, killed and skinned it, and packed it up.

It will be observed that many of the above signs admitted of and were expressed by pantomime, yet that was not the case with all that were made. President GALLAUDET made also some remarks in gesture which were understood by the Indians, yet were not strictly pantomimic.

The opinion of all present at the test was that two intelligent mimes would seldom fail of mutual understanding, their attention being exclusively directed to the expression of thoughts by the means of comprehension and reply equally possessed by both, without the mental confusion of conventional sounds only intelligible to one.

A large collection has been made of natural deaf-mute signs, and also of those more conventional, which have been collated with those of the several tribes of Indians. Many of them show marked similarity, not only in principle but often in detail.

The result of the studies so far as prosecuted is that what is called *the* sign language of Indians is not, properly speaking, one language, but that it and the gesture systems of deaf-mutes and of all peoples constitute together one language—the gesture speech of mankind—of which each system is a dialect.

TO WHAT EXTENT PREVALENT AS A SYSTEM.

The assertion has been made by many writers, and is currently repeated by Indian traders and some Army officers, that all the tribes of North America have long had and still use a *common* and *identical* sign language, in which they can communicate freely without oral assistance. Although this remarkable statement is at variance with some of the principles of the formation and use of signs set forth by Dr. E. B. TYLOR, whose admirable chapters on gesture speech in his *Researches into the Early History of Mankind* have in a great degree prompted the present inquiries, that eminent authority did not see fit to discredit it.* He repeats the report as he received it, in the words that "the same signs serve as a medium of converse from Hudson Bay to the Gulf of Mexico." Its truth or falsity can only be established by careful comparison of lists or vocabularies of signs taken under test conditions at widely different times and places. For this purpose lists have been collated by the writer, taken in different parts of the country at several dates, from the last century to the last month, comprising together several thousand signs, many of them, however, being mere variants or

synonyms for the same object or quality, some being repetitions of others and some of small value from uncertainty in description or authority, or both.

ONCE PROBABLY UNIVERSAL IN NORTH AMERICA.

The conclusion reached from the researches made is to the effect that before the changes wrought by the Columbian discovery the use of gesture illustrated the remark of Quintilian upon the same subject (l. xi, c. 3) that "*In tanta per omnes gentes nationesque linguæ diversitate hic mihi omnium hominum communis sermo videatur.*"

Quotations may be taken from some old authorities referring to widely separated regions. The Indians of Tampa Bay, identified with the Timucua, met by Cabeça de Vaca in 1528, were active in the use of signs, and in his journeying for eight subsequent years, probably through Texas and Mexico, he remarks that he passed through many dissimilar tongues, but that he questioned and received the answers of the Indians by signs "just as if they spoke our language and we theirs." Michaëlius, writing in 1628, says of the Algonkins on or near the Hudson River: "For purposes of trading as much was done by signs with the thumb and fingers as by speaking." In Bossu's *Travels through that part of North America formerly called Louisiana*, *London*, 1771 (Forster's translation), an account is given of Monsieur de Belle-Isle some years previously captured by the Atak-apa, who remained with them two years and "conversed in their pantomimes with them." He was rescued by Governor Bienville and was sufficiently expert in the sign language to interpret between Bienville and the tribe. In Bushmann's *Spuren*, p. 424, there is a reference to the "Accocessaws on the west side of the Colorado, two hundred miles southwest of Nacogdoches," who use thumb signs which they understand: "*Theilen sich aber auch durch Daum-Zeichen mit, die sie alle verstehen.*"

Omitting many authorities, and for brevity allowing a break in the continuity of time, reference may be made to the statement in Major Long's expedition of 1819, concerning the Arapahos, Kaiowas, Ietans, and Cheyennes, to the effect that, being ignorant of each other's languages, many of them when they met would communicate by means of signs, and would thus maintain a conversation without the least difficulty or interruption. A list of the tribes reported upon by Prince Maximilian von Wied-Neuweid, in 1832–'34, appears elsewhere in this paper. In Frémont's expedition of 1844 special and repeated allusion is made to the expertness of the Pai-Utes in signs, which is contradictory to the statement above made by correspondents. The same is mentioned regarding a band of Shoshonis met near the summit of the Sierra Nevada, and one of "Diggers," probably Chemehuevas, encountered on a tributary of the Rio Virgen.

Ruxton, in his *Adventures in Mexico and the Rocky Mountains*, *New York*, 1848, p. 278, sums up his experience with regard to the Western

tribes so well as to require quotation: "The language of signs is so perfectly understood in the Western country, and the Indians themselves are such admirable pantomimists, that, after a little use, no difficulty whatever exists in carrying on a conversation by such a channel; and there are few mountain men who are at a loss in thoroughly understanding and making themselves intelligible by signs alone, although they neither speak nor understand a word of the Indian tongue."

Passing to the correspondents of the writer from remote parts of North America, it is important to notice that Mr. J. W. Powell, Indian superintendent, reports the use of sign language among the Kutine, and Mr. James Lenihan, Indian agent, among the Selish, both tribes of British Columbia. The Very Rev. Edward Jacker, while contributing information upon the present use of gesture language among the Ojibwas of Lake Superior, mentions that it has fallen into comparative neglect because for three generations they had not been in contact with tribes of a different speech. Dr. Francis H. Atkins, acting assistant surgeon, United States Army, in forwarding a contribution of signs of the Mescalero Apaches remarks: "I think it probable that they have used sign language rather less than many other Indians. They do not seem to use it to any extent at home, and abroad the only tribes they were likely to come into contact with were the Navajos, the Lipans of old Mexico, and the Comanches. Probably the last have been almost alone their visiting neighbors. They have also seen the Pueblos a little, these appearing to be, like the Phœnicians of old, the traders of this region." He also alludes to the effect of the Spanish, or rather *lingua Mexicana*, upon all the Southern tribes and, indeed, upon those as far north as the Utes, by which recourse to signs is now rendered less necessary.

Before leaving this particular topic it is proper to admit that, while there is not only recorded testimony to the past use of gesture signs by several tribes of the Iroquoian and Algonkian families, but evidence that it still remains, it is, however, noticeable that these families when met by their first visitors do not appear to have often impressed the latter with their reliance upon gesture language to the same extent as has always been reported of the tribes now and formerly found farther inland. An explanation may be suggested from the fact that among those families there were more people dwelling near together in communities speaking the same language, though with dialectic peculiarities, than became known later in the farther West, and not being nomadic their intercourse with strange tribes was less individual and conversational. Some of the tribes, in especial the Iroquois proper, were in a comparatively advanced social condition. A Mohawk or Seneca would probably have repeated the arrogance of the old Romans, whom in other respects they resembled, and compelled persons of inferior tribes to learn his language if they desired to converse with him, instead of resorting to the compromise of gesture speech, which he had practiced before the prowess and policy of the confederated Five Nations had gained supremacy and which was still used for special purposes between the members of his own tribe.

The studies thus far pursued lead to the conclusion that at the time of the discovery of North America all its inhabitants practiced sign language, though with different degrees of expertness, and that while under changed circumstances it was disused by some, others, in especial those who after the acquisition of horses became nomads of the Great Plains, retained and cultivated it to the high development now attained, from which it will surely and speedily decay.

MISTAKEN DENIAL THAT SIGN LANGUAGE EXISTS.

The most useful suggestion to persons interested in the collection of signs is that they shall not too readily abandon the attempt to discover recollections of them even among tribes long exposed to European influence and officially segregated from others. The instances where their existence, at first denied, has been ascertained are important with reference to the theories advanced.

Rev. J. Owen Dorsey has furnished a considerable vocabulary of signs finally procured from the Poncas, although, after residing among them for years, with thorough familiarity with their language, and after special and intelligent exertion to obtain some of their disused gesture language, he had before reported it to be entirely forgotten. A similar report was made by two missionaries among the Ojibwas, though other trustworthy authorities have furnished a copious list of signs obtained from that tribe. This is no imputation against the missionaries, as in October, 1880, five intelligent Ojibwas from Petoskey, Mich., told the writer that they had never heard of gesture language. An interesting letter from Mr. B. O. Williams, sr., of Owasso, Mich., explains the gradual decadence of signs used by the Ojibwas in his recollection, embracing sixty years, as chiefly arising from general acquaintance with the English language. Further discouragement came from an Indian agent giving the decided statement, after four years of intercourse with the Pai-Utes, that no such thing as a communication by signs was known or even remembered by them, which, however, was less difficult to bear because on the day of the receipt of that well-intentioned missive some officers of the Bureau of Ethnology were actually talking in signs with a delegation of that very tribe of Indians then in Washington, from one of whom, Nátci, a narrative printed in this paper (page 500), was received.

The report from missionaries, army officers, and travelers in Alaska was unanimous against the existence of a sign language there until Mr. Ivan Petroff, whose explorations had been more extensive, gave the excellent exposition and dialogue now produced (see page 492). Collections were also obtained from the Apaches and Zuñi, Pimas, Papagos, and Maricopas, after agents and travelers had denied them to be possessed of any knowledge on the subject.

For the reasons mentioned under the last heading, little hope was entertained of procuring a collection from any of the Iroquoian stock, but

the intelligent and respectable chief of the Wyandots, Hénto (Gray Eyes), came to the rescue. His tribe was moved from Ohio in July, 1843, to the territory now occupied by the State of Kansas, and then again moved to Indian Territory, in 1870. He asserts that about one-third of the tribe, the older portion, know many signs, a partial list of which he gave with their descriptions. He was sure that those signs were used before the removal from Ohio, and he saw them used also by Shawnees, Delawares, and Senecas there.

Unanimous denial of any existence of sign language came from the British provinces of Ontario and Quebec, and was followed by the collection obtained by the Hon. Horatio Hale. His statement of the time and manner of its being procured by him is not only interesting but highly instructive:

"The aged Mohawk chief, from whom the information on this subject has been obtained, is commonly known by his English name of John Smoke Johnson. 'Smoke' is a rude version of his Indian name, *Sakayenkwaraton*, which may be rendered 'Disappearing Mist.' It is the term applied to the haze which rises in the morning of an autumn day, and gradually passes away. Chief Johnson has been for many years 'speaker' of the great council of the Six Nations. In former times he was noted as a warrior, and later has been esteemed one of the most eloquent orators of his race. At the age of eighty-eight years he retains much of his original energy. He is considered to have a better knowledge of the traditions and ancient customs of his people than any other person now living. This superior knowledge was strikingly apparent in the course of the investigations which were made respecting the sign language. Two other members of his tribe, well-educated and very intelligent men of middle age, the one a chief and government interpreter, the other a clergyman now settled over a white congregation, had both been consulted on the subject and both expressed the opinion that nothing of the sign language, properly speaking, was known among the Six Nations. They were alike surprised and interested when the old chief, in their presence, after much consideration, gradually drew forth from the stores of his memory the proofs of an accomplishment which had probably lain unused for more than half a century."

One of the most conclusive instances of the general knowledge of sign language, even when seldom used, was shown in the visit of five Jicarilla Apaches to Washington in April, 1880, under the charge of Dr. Benjamin Thomas, their agent. The latter said he had never heard of any use of signs among them. But it happened that there was a delegation of Absaroka (Crows) at the same hotel, and the two parties from such widely separated regions, not knowing a word of each other's language, immediately began to converse in signs, resulting in a decided sensation. One of the Crows asked the Apaches whether they ate horses, and it happening that the sign for *eating* was misapprehended for that known by the Apaches for *many*, the question was supposed

to be whether the latter had many horses, which was answered in the affirmative. Thence ensued a misunderstanding on the subject of hippophagy, which was curious both as showing the general use of signs as a practice and the diversity in special signs for particular meanings. The surprise of the agent at the unsuspected accomplishment of his charges was not unlike that of a hen who, having hatched a number of duck eggs, is perplexed at the instinct with which the brood takes to the water.

The denial of the use of signs is often faithfully though erroneously reported from the distinct statements of Indians to that effect. In that, as in other matters, they are often provokingly reticent about their old habits and traditions. Chief Ouray asserted to the writer, as he also did to Colonel Dodge, that his people, the Utes, had not the practice of sign talk, and had no use for it. This was much in the proud spirit in which an Englishman would have made the same statement, as the idea involved an accusation against the civilization of his people, which he wished to appear highly advanced. Still more frequently the Indians do not distinctly comprehend what is sought to be obtained. Sometimes, also, the art, abandoned in general, only remains in the memories of a few persons influenced by special circumstances or individual fancy.

In this latter regard a comparison may be made with the old science of heraldry, once of practical use and a necessary part of a liberal education, of which hardly a score of persons in the United States have any but the vague knowledge that it once existed; yet the united memories of those persons could, in the absence of records, reproduce all essential points on the subject.

Another cause for the mistaken denial in question must be mentioned. When travelers or sojourners have become acquainted with signs in any one place they may assume that those signs constitute *the* sign language, and if they afterwards meet tribes not at once recognizing those signs, they remove all difficulty about the theory of a "one and indivisible" sign language by simply asserting that the tribes so met do not understand *the* sign language, or perhaps that they do not use signs at all. This precise assertion has, as above mentioned, been made regarding the Utes and Apaches. Of course, also, Indians who have not been brought into sufficient contact with certain tribes using different signs, for the actual trial which would probably result in mutual comprehension, tell the travelers the same story. It is the venerable one of "ἄγλωσσος," "Njemez," "barbarian," and "stammering," above noted, applied to the hands instead of the tongue. Thus an observer possessed by a restrictive theory will find no signs where they are in plenty, while another determined on the universality and identity of sign language can, as elsewhere explained, produce, from perhaps the same individuals, evidence in his favor from the apparently conclusive result of successful communication.

PERMANENCE OF SIGNS.

In connection with any theory it is important to inquire into the permanence of particular gesture signs to express a special idea or object when the system has been long continued. Many examples have been given above showing that the gestures of classic times are still in use by the modern Italians with the same signification; indeed that the former on Greek vases or reliefs or in Herculanean bronzes can only be interpreted by the latter. In regard to the signs of instructed deaf-mutes in this country there appears to be a permanence beyond expectation. Mr. Edmund Booth, a pupil of the Hartford Institute half a century ago, and afterwards a teacher, says in the "*Annals*" for April, 1880, that the signs used by teachers and pupils at Hartford, Philadelphia, Washington, Council Bluffs, and Omaha were nearly the same as he had learned. "We still adhere to the old sign for President from Monroe's three-cornered hat, and for governor we designate the cockade worn by that dignitary on grand occasions three generations ago."

The specific comparisons made, especially by Dr. Washington Matthews and Dr. W. C. Boteler, of the signs reported by the Prince of Wied in 1832 with those now used by the same tribes from whom he obtained them, show a remarkable degree of permanency in many of those that were so clearly described by the Prince as to be proper subjects of any comparison. If they have persisted for half a century their age is probably much greater. In general it is believed that signs, constituting as they do a natural mode of expression, though enlarging in scope as new ideas and new objects require to be included and though abbreviated as hereinafter explained, do not readily change in their essentials.

The writer has before been careful to explain that he does not present any signs as precisely those of primitive man, not being so carried away by enthusiasm as to suppose them possessed of immutability and immortality not found in any other mode of human utterance. Yet such signs as are generally prevalent among Indian tribes, and also in other parts of the world, must be of great antiquity. The use of derivative meanings to a sign only enhances this presumption. At first there might not appear to be any connection between the ideas of *same* and *wife*, expressed by the sign of horizontally extending the two forefingers side by side. The original idea was doubtless that given by the Welsh captain in Shakspere's Henry V: "'Tis so like as my fingers is to my fingers," and from this similarity comes "equal," "companion," and subsequently the close life-companion "wife." The sign is used in each of these senses by different Indian tribes, and sometimes the same tribe applies it in all of the senses as the context determines. It appears also in many lands with all the significations except that of "wife." It is proper here to mention that the suggestion of several correspondents that the Indian sign as applied to "wife" refers to "lying together" is rendered improbable by the fact that when the same tribes desire to express the sexual relation of marriage it is gestured otherwise.

Many signs but little differentiated were unstable, while others that have proved the best modes of expression have survived as definite and established. Their prevalence and permanence being mainly determined by the experience of their utility, it would be highly interesting to ascertain how long a time was required for a distinctly new conception or execution to gain currency, become "the fashion," so to speak, over a large part of the continent, and to be supplanted by a new "mode." A note may be made in this connection of the large number of diverse signs for *horse*, all of which must have been invented within a comparatively recent period, and the small variation in the signs for *dog*, which are probably ancient.

SURVIVAL IN GESTURE.

Even when the specific practice of sign language has been generally discontinued for more than one generation, either from the adoption of a jargon or from the common use of the tongue of the conquering English, French, or Spanish, some of the gestures formerly employed as substitutes for words may survive as a customary accompaniment to oratory or impassioned conversation, and, when ascertained, should be carefully noted. An example, among many, may be found in the fact that the now civilized Muskoki or Creeks, as mentioned by Rev. H. F. Buckner, when speaking of the height of children or women, illustrate their words by holding their hands at the proper elevation, palm up; but when describing the height of "soulless" animals or inanimate objects, they hold the palm downward. This, when correlated with the distinctive signs of other Indians, is an interesting case of the survival of a practice which, so far as yet reported, the oldest men of the tribe now living only remember to have once existed. It is probable that a collection of such distinctive gestures among the most civilized Indians would reproduce enough of their ancient system to be valuable, while possibly the persistent inquirer might in his search discover some of its surviving custodians even among Chahta or Cheroki, Innuit or Abnaki, Klamath or Nutka.

DISTINCTION BETWEEN IDENTITY OF SIGNS AND THEIR USE AS AN ART.

The general report that there is but one sign language in North America, any deviation from which is either blunder, corruption, or a dialect in the nature of provincialism, may be examined in reference to some of the misconceived facts which gave it origin and credence. It may not appear to be necessary that such examination should be directed to any mode of collecting and comparing signs which would amount to their distortion. It is useful, however, to explain that distortion would result from following the views of a recent essayist, who takes the ground that the description of signs should be made according to a "mean" or average. There can be no philosophic consideration of signs according to a "mean" of observations. The proper object is to ascertain the radical or essential part

as distinct from any individual flourish or mannerism on the one hand, and from a conventional or accidental abbreviation on the other; but a mere average will not accomplish that object. If the hand, being in any position whatever, is, according to five observations, moved horizontally one foot to the right, and, according to five other observations, moved one foot horizontally to the left, the "mean" or resultant will be that it is stationary, which sign does not correspond with any of the ten observations. So if six observations give it a rapid motion of one foot to the right and five a rapid motion of the same distance to the left, the mean or resultant would be somewhat difficult to express, but perhaps would be a slow movement to the right for an inch or two, having certainly no resemblance either in essentials or accidents to any of the signs actually observed. In like manner the tail of the written letter "*y*" (which, regarding its mere formation, might be a graphic sign) may have in the chirography of several persons various degrees of slope, may be a straight line, or looped, and may be curved on either side; but a "mean" taken from the several manuscripts would leave the unfortunate letter without any tail whatever, or travestied as a "*u*" with an amorphous flourish. A definition of the radical form of the letter or sign by which it can be distinguished from any other letter or sign is a very different proceeding. Therefore, if a "mean" or resultant of any number of radically different signs to express the same object or idea, observed either among several individuals of the same tribe or among different tribes, is made to represent those signs, they are all mutilated and ignored as distinctive signs, though the result may possibly be made intelligible in practice, according to principles mentioned in the present paper. The expedient of a "mean" may be practically useful in the formation of a mere interpreter's jargon, but it elucidates no principle. It is also convenient for any one determined to argue for the uniformity of sign language as against the variety in unity apparent in all the realms of nature. On the "mean" principle, he only needs to take his two-foot rule and arithmetical tables and make all signs his signs and his signs all signs. Of course they are uniform, because he has made them so after the brutal example of Procrustes.

In this connection it is proper to urge a warning that a mere sign talker is often a bad authority upon principles and theories. He may not be liable to the satirical compliment of Dickens's "brave courier," who "understood all languages indifferently ill"; but many men speak some one language fluently, and yet are wholly unable to explain or analyze its words and forms so as to teach it to another person, or even to give an intelligent summary or classification of their own knowledge. What such a sign talker has learned is by memorizing, as a child may learn English, and though both the sign talker and the child may be able to give some separate items useful to a philologist or foreigner, such items are spoiled when colored by the attempt of ignorance to theorize.

A German who has studied English to thorough mastery, except in the mere facility of speech, may in a discussion upon some of its principles be contradicted by any mere English speaker, who insists upon his superior knowledge because he actually speaks the language and his antagonist does not, but the student will probably be correct and the talker wrong. It is an old adage about oral speech that a man who understands but one language understands none. The science of a sign talker possessed by a restrictive theory is like that of Mirabeau, who was greater as an orator than as a philologist, and who on a visit to England gravely argued that there was something seriously wrong in the British mind because the people would persist in saying "give me some bread" instead of "*donnez-moi du pain*," which was so much easier and more natural. A designedly ludicrous instance to the same effect was Hood's arraignment of the French because they called their mothers "mares" and their daughters "fillies." It is necessary to take with caution any statement from a person who, having memorized or hashed up any number of signs, large or small, has decided in his conceit that those he uses are the only genuine Simon Pure, to be exclusively employed according to his direction, all others being counterfeits or blunders. His vocabulary has ceased to give the signs of any Indian or body of Indians whatever, but becomes his own, the proprietorship of which he fights for as if secured by letters-patent. When a sign is contributed by one of the present collaborators, which such a sign talker has not before seen or heard of, he will at once condemn it as bad, just as a United States Minister to Vienna, who had been nursed in the mongrel Dutch of Berks County, Pennsylvania, declared that the people of Germany spoke very bad German.

An argument for the uniformity of the signs of our Indians is derived from the fact that those used by any of them are generally understood by others. But signs may be understood without being identical with any before seen. The entribal as well as intertribal exercise of Indians for generations in gesture language has naturally produced great skill both in expression and reception, so as to render them measurably independent of any prior mutual understanding, or what in a system of signals is called preconcert. Two accomplished army signalists can, after sufficient trial, communicate without having any code in common between them, one being mutually devised, and those specially designed for secrecy are often deciphered. So, if any one of the more conventional signs is not quickly comprehended, an Indian skilled in the principle of signs resorts to another expression of his flexible art, perhaps reproducing the gesture unabbreviated and made more graphic, perhaps presenting either the same or another conception or quality of the same object or idea by an original portraiture.

An impression of the community of signs is the more readily made because explorers and officials are naturally brought into contact more closely with those individuals of the tribes visited who are experts in

sign language than with their other members, and those experts, on account of their skill as interpreters, are selected as guides to accompany the visitors. The latter also seek occasion to be present when signs are used, whether with or without words, in intertribal councils, and then the same class of experts comprises the orators, for long exercise in gesture speech has made the Indian politicians, with no special effort, masters of the art acquired by our public speakers only after laborious apprenticeship. The whole theory and practice of sign language being that all who understand its principles can make themselves mutually intelligible, the fact of the ready comprehension and response among all the skilled gesturers gives the impression of a common code. Furthermore, if the explorer learn to employ with ingenuity the signs used by any of the tribes, he will probably be understood in any other by the same class of persons who will surround him in the latter, thereby confirming him in the "common" theory. Those of the tribe who are less skilled, but who are not noticed, might be unable to catch the meaning of signs which have not been actually taught to them, just as ignorant persons among us cannot derive any sense from newly-coined words or those strange to their habitual vocabulary, which, though never before heard, linguistic scholars would instantly understand and might afterward adopt.

It is also common experience that when Indians find that a sign which has become conventional among their tribe is not understood by an interlocutor, a self-expressive sign is substituted for it, from which a visitor may form the impression that there are no conventional signs. It may likewise occur that the self-expressive sign substituted will be met with by a visitor in several localities, different Indians, in their ingenuity, taking the best and the same means of reaching the exotic intelligence.

There is some evidence that where sign language is now found among Indian tribes it has become more uniform than ever before, simply because many tribes have for some time past been forced to dwell near together at peace. A collection was obtained in the spring of 1880, at Washington, from a united delegation of the Kaiowa, Comanche, Apache, and Wichita tribes, which was nearly uniform, but the individuals who gave the signs had actually lived together at or near Anadarko, Indian Territory, for a considerable time, and the resulting uniformity of their signs might either be considered as a jargon or as the natural tendency to a compromise for mutual understanding—the unification so often observed in oral speech, coming under many circumstances out of former heterogeneity. The rule is that dialects precede languages and that out of many dialects comes one language. It may be found that other individuals of those same tribes who have from any cause not lived in the union explained may have signs for the same ideas different from those in the collection above mentioned. This is probable, because some signs of other representatives of one of the component bodies—Apache—have actually been reported differing from those for the same ideas given by

the Anadarko group. The uniformity of the signs of those Arapahos, Cheyennes, and Sioux who have been secluded for years at one particular reservation, so far as could be done by governmental power, from the outer world, was used in argument by a correspondent; but some collected signs of other Cheyennes and Sioux differ, not only from those on the reservation, but among each other. Therefore the signs used in common by the tribes at the reservation seem to have been modified and to a certain extent unified.

The result of the collation and analysis of the large number of signs collected is that in numerous instances there is an entire discrepancy between the signs made by different bodies of Indians to express the same idea, and that if any of these are regarded as rigidly determinate, or even conventional with a limited range, and used without further devices, they will fail in conveying the desired impression to any one unskilled in gesture as an art, who had not formed the same precise conception or been instructed in the arbitrary motion. Few of the gestures that are found in current use are, in their origin, conventional. They are only portions, more or less elaborate, of obvious natural pantomime, and those proving efficient to convey most successfully at any time the several ideas became the most widely adopted, liable, however, to be superseded by more appropriate conceptions and delineations. The skill of any tribe and the copiousness of its signs are proportioned first to the necessity for their use, and secondly to the accidental ability of the individuals in it who act as custodians and teachers, so that the several tribes at different times vary in their degree of proficiency, and therefore both the precise mode of semiotic expression and the amount of its general use are always fluctuating. Sign language as a product of evolution has been developed rather than invented, and yet it seems probable that each of the separate signs, like the several steps that lead to any true invention, had a definite origin arising out of some appropriate occasion, and the same sign may in this manner have had many independent origins due to identity in the circumstances, or if lost, may have been reproduced.

The process is precisely the same as that observed among deaf-mutes. One of those unfortunate persons, living with his speaking relatives, may invent signs which the latter are taught to understand, though strangers sometimes will not, because they may be by no means the fittest expressions. Should a dozen or more deaf-mutes, possessed only of such crude signs, come together, they will be able at first to communicate only on a few common subjects, but the number of those and the general scope of expression will be continually enlarged. Each one commences with his own conception and his own presentment of it, but the universality of the medium used makes it sooner or later understood. This independent development, thus creating diversity, often renders the first interchange of thought between strangers slow, for the signs must be self-interpreting. There can be no natural universal language which is absolute and arbitrary. When used without convention, as sign language

alone of all modes of utterance can be, it must be tentative, experimental, and flexible. The mutes will also resort to the invention of new signs for new ideas as they arise, which will be made intelligible, if necessary, through the illustration and definition given by signs formerly adopted, so that the fittest signs will be evolved, after rivalry and trial, and will survive. But there may not always be such a preponderance of fitness that all but one of the rival signs shall die out, and some, being equal in value to express the same idea or object, will continue to be used indifferently, or as a matter of individual taste, without confusion. A multiplication of the numbers confined together, either of deaf-mutes or of Indians whose speech is diverse, will not decrease the resulting uniformity, though it will increase both the copiousness and the precision of the vocabulary. The Indian use of signs, though maintained by linguistic diversities, is not coincident with any linguistic boundaries. The tendency is to their uniformity among groups of people who from any cause are brought into contact with each other while still speaking different languages. The longer and closer such contact, while no common tongue is adopted, the greater will be the uniformity of signs.

Colonel Dodge takes a middle ground with regard to the identity of the signs used by our Indians, comparing it with the dialects and provincialisms of the English language, as spoken in England, Ireland, Scotland, and Wales. But those dialects are the remains of actually diverse languages, which to some speakers have not become integrated. In England alone the provincial dialects are traceable as the legacies of Saxons, Angles, Jutes, and Danes, with a varying amount of Norman influence. A thorough scholar in the composite tongue, now called English, will be able to understand all the dialects and provincialisms of English in the British Isles, but the uneducated man of Yorkshire is not able to communicate readily with the equally uneducated man of Somersetshire. This is the true distinction to be made. A thorough sign talker would be able to talk with several Indians who have no signs in common, and who, if their knowledge of signs were only memorized, could not communicate together. So also, as an educated Englishman will understand the attempts of a foreigner to speak in very imperfect and broken English, a good Indian sign expert will apprehend the feeble efforts of a tyro in gestures. But Colonel Dodge's conclusion that there is but one true Indian sign language, just as there is but one true English language, is not proved unless it can be shown that a much larger proportion of the Indians who use signs at all, than present researches show to be the case, use identically the same signs to express the same ideas. It would also seem necessary to the parallel that the signs so used should be absolute, if not arbitrary, as are the words of an oral language, and not independent of preconcert and self-interpreting at the instant of their invention or first exhibition, as all true signs must originally have been and still measurably remain. All Indians, as all gesturing men, have many natural signs in common and many others which are now conventional. The conventions

by which the latter were established occurred during long periods, when the tribes forming them were so separated as to have established altogether diverse customs and mythologies, and when the several tribes were with such different environment as to have formed varying conceptions needing appropriate sign expression. The old error that the North American Indians constitute one homogeneous race is now abandoned. Nearly all the characteristics once alleged as segregating them from the rest of mankind have proved not to belong to the whole of the pre-Columbian population, but only to those portions of it first explored. The practice of scalping is not now universal, even among the tribes least influenced by civilization, if it ever was, and therefore the cultivation of the scalp-lock separated from the rest of the hair of the head, or with the removal of all other hair, is not a general feature of their appearance. The arrangement of the hair is so different among tribes as to be one of the most convenient modes for their pictorial distinction. The war paint, red in some tribes, was black in others; the mystic rites of the calumet were in many regions unknown, and the use of wampum was by no means extensive. The wigwam is not the type of native dwellings, which show as many differing forms as those of Europe. In color there is great variety, and even admitting that the term "race" is properly applied, no competent observer would characterize it as red, still less copper-colored. Some tribes differ from each other in all respects nearly as much as either of them do from the lazzaroni of Naples, and more than either do from certain tribes of Australia. It would therefore be expected, as appears to be the case, that the conventional signs of different stocks and regions differ as do the words of English, French, and German, which, nevertheless, have sprung from the same linguistic roots. No one of those languages is a dialect of any of the others; and although the sign systems of the several tribes have greater generic unity with less specific variety than oral languages, no one of them is necessarily the dialect of any other.

Instead, therefore, of admitting, with present knowledge, that the signs of our Indians are "identical" and "universal," it is the more accurate statement that the systematic attempt to convey meaning by signs is universal among the Indians of the Plains, and those still comparatively unchanged by civilization. Its successful execution is by an *art*, which, however it may have commenced as an instinctive mental process, has been cultivated, and consists in actually pointing out objects in sight not only for designation, but for application and predication, and in suggesting others to the mind by action and the airy forms produced by action. To insist that sign language is uniform were to assert that it is perfect—"That faultless monster that the world ne'er saw."

FORCED AND MISTAKEN SIGNS.

Examination into the identity of signs is complicated by the fact that in the collection and description of Indian signs there is danger lest the

civilized understanding of them may be mistaken or forced. The liability to those errors is much increased when the collections are not taken directly from the Indians themselves, but are given as obtained at second-hand from white traders, trappers, and interpreters, who, through misconception in the beginning and their own introduction or modification of gestures, have produced a jargon in the sign, as well as in the oral intercourse. An Indian talking in signs, either to a white man or to another Indian using signs which he never saw before, catches the meaning of that which is presented and adapts himself to it, at least for the occasion. Even when he finds that his interlocutor insists upon understanding and presenting a certain sign in a manner and with a significance widely different from those to which he has been accustomed, it is within the very nature, tentative and elastic, of the gesture art—both performers being on an equality—that he should adopt the one that seems to be recognized or that is pressed upon him, as with much greater difficulty he has learned and adopted many foreign terms used with whites before attempting to acquire their language, but never with his own race. Thus there is now, and perhaps always has been, what may be called a *lingua-franca* in the sign vocabulary. It is well known that all the tribes of the Plains having learned by experience that white visitors expect to receive certain signs really originating with the latter, use them in their intercourse just as they sometimes do the words "squaw" and "papoose," corruptions of the Algonkian, and once as meaningless in the present West as the English terms "woman" and "child," but which the first pioneers, having learned them on the Atlantic coast, insisted upon treating as generally intelligible.

The perversity in attaching through preconceived views a wrong significance to signs is illustrated by an anecdote found in several versions and in several languages, but repeated as a veritable Scotch legend by Duncan Anderson, esq., Principal of the Glasgow Institution for the Deaf and Dumb, when he visited Washington in 1853.

King James I. of England, desiring to play a trick upon the Spanish ambassador, a man of great erudition, but who had a crotchet in his head upon sign language, informed him that there was a distinguished professor of that science in the university at Aberdeen. The ambassador set out for that place, preceded by a letter from the King with instructions to make the best of him. There was in the town one Geordy, a butcher, blind of one eye, a fellow of much wit and drollery. Geordy is told to play the part of a professor, with the warning not to speak a word; is gowned, wigged, and placed in a chair of state, when the ambassador is shown in and they are left alone together. Presently the nobleman came out greatly pleased with the experiment, claiming that his theory was demonstrated. He said: "When I entered the room I raised one finger to signify there is one God. He replied by raising two fingers to signify that this Being rules over two worlds, the material and the spiritual. Then I raised three fingers, to say there are three

persons in the Godhead. He then closed his fingers, evidently to say these three are one." After this explanation on the part of the nobleman the professors sent for the butcher and asked him what took place in the recitation room. He appeared very angry and said: "When the crazy man entered the room where I was he raised one finger, as much as to say I had but one eye, and I raised two fingers to signify that I could see out of my one eye as well as he could out of both of his. When he raised three fingers, as much as to say there were but three eyes between us, I doubled up my fist, and if he had not gone out of that room in a hurry I would have knocked him down."

The readiness with which a significance may be found in signs when none whatever exists is also shown in the great contest narrated by Rabelais between Panurge and the English philosopher, Thaumast, commencing as follows:

"Everybody then taking heed in great silence, the Englishman lifted his two hands separately, clinching the ends of his fingers in the form that at Chion they call the fowl's tail. Then he struck them together by the nails four times. Then he opened them and struck one flat upon the other with a clash once; after which, joining them as above, he struck twice, and four times afterwards, on opening them. Then he placed them, joined and extended the one above the other, seeming to pray God devoutly.

"Panurge suddenly moved his right hand in the air, placed the right-hand thumb at the right-hand nostril, holding the four fingers stretched out and arrayed in parallel lines with the point of the nose; shutting the left eye entirely, and winking with the right, making a profound depression with eyebrow and eyelid. Next he raised aloft the left with a strong clinching and extension of the four fingers and elevation of the thumb, and held it in line directly corresponding with the position of the right, the distance between the two being a cubit and a half. This done, in the like manner he lowered towards the ground both hands, and finally held them in the midst as if aiming straight at the Englishman's nose."

And so on at great length. The whole performance of Panurge was to save the credit of Pantagruel by making fantastic and mystic motions in pretended disputation with the signs given by Thaumast in good faith. Yet the latter confessed himself conquered, and declared that he had derived inestimable information from the purposely meaningless gestures. The satire upon the diverse interpretations of the gestures of Naz-de-cabre (*Pantagruel*, Book III, chap. xx) is to the same effect, showing it to have been a favorite theme with Rabelais.

ABBREVIATIONS.

A lesson was learned by the writer as to the abbreviation of signs, and the possibility of discovering the original meaning of those most obscure, from the attempts of a Cheyenne to convey the idea of *old man*.

He held his right hand forward, bent at elbow, fingers and thumb closed sidewise. This not conveying any sense, he found a long stick, bent his back, and supported his frame in a tottering step by the stick held, as was before only imagined. Here at once was decrepit age dependent on a staff. The principle of abbreviation or reduction may be illustrated by supposing a person, under circumstances forbidding the use of the voice, seeking to call attention to a particular bird on a tree, and failing to do so by mere indication. Descriptive signs are resorted to, perhaps suggesting the bill and wings of the bird, its manner of clinging to the twig with its feet, its size by seeming to hold it between the hands, its color by pointing to objects of the same hue; perhaps by the action of shooting into a tree, picking up the supposed fallen game, and plucking feathers. These are continued until understood, and if one sign or combination of signs proves to be successful it will be repeated on the next occasion by both persons engaged, and after becoming familiar between them and others will be more and more abbreviated. Conventionality in signs largely consists in the form of abbreviation which is agreed upon. When the signs of the Indians have from ideographic form thus become demotic, they may be called conventional, but still not arbitrary. In them, as in all his actions, man had at the first a definite meaning or purpose, together with method in their subsequent changes or modifications.

Colonel Dodge gives a clear account of the manner in which an established sign is abbreviated in practice, as follows: "There are an almost infinite number and variety of abbreviations. For instance, to tell a man to 'talk,' the most common formal sign is made thus: Hold the right hand in front of, the back near, the mouth, end of thumb and index-finger joined into an 'O,' the outer fingers closed on the palm; throw the hand forward sharply by a quick motion of the wrist, and at the same time flip forward the index-finger. This may be done once or several times.

"The formal sign to 'cease' or 'stop doing' anything is made by bringing the two hands open and held vertically in front of the body, one behind the other, then quickly pass one upward, the other downward, simulating somewhat the motion of the limbs of a pair of scissors, meaning 'cut it off.' The latter sign is made in conversation in a variety of ways, but habitually with one hand only.

"The formal sign to 'stop talking' is first to make the formal sign for 'talk,' then the formal sign for 'cut;' but this is commonly abbreviated by first making the formal sign for 'talk' with the right hand, and then immediately passing the same hand, open, fingers extended, downward across and in front of the mouth, 'talk, cut.'

"But though the Plains Indian, if asked for the sign to 'stop talking,' will properly give the sign either in its extended or abbreviated form as above, he in conversation abbreviates it so much further that the sign loses almost all resemblance to its former self. Whatever the position of the hand, a turn of the wrist, a flip of the forefinger, and a

turn of the wrist back to its original position is fully equivalent to the elaborate signs."

It may be added that nearly every sign which to be intelligibly described and as exhibited in full requires the use of both hands, is outlined, with one hand only, by skillful Indians gesturing between themselves, so as to be clearly understood between them. Two Indians, whose blankets are closely held to their bodies by the left hand, which is necessarily rendered unavailable for gesture, will severally thrust the right from beneath the protecting folds and converse freely. The same is true when one hand of each holds the bridle of a horse.

The Italian signs are also made in such abbreviated forms as to be little more than hinted at, requiring a perfect knowledge of the full and original form before the slight and often furtive suggestion of it can be understood. Deaf-mutes continually seek by tacit agreement to shorten their signs more and more. While the original of each may be preserved in root or stem, it is only known to the proficient, as the root or stem of a plant enables botanists, but no others, to distinguish it. Thus the natural character of signs, the universal significance which is their peculiarly distinctive feature, may and often does become lost. From the operation of the principle of independent and individual abbreviation inherent in all sign language, without any other cause, that of the Indians must in one or two generations have become diverse, even if it had in fact originated from one tribe in which all conceptions and executions were absolute.

ARE SIGNS CONVENTIONAL OR INSTINCTIVE?

There has been much discussion on the question whether gesture signs were originally invented, in the strict sense of that term, or whether they result from a natural connection between them and the ideas represented by them, that is whether they are conventional or instinctive. Cardinal Wiseman (*Essays*, III, 537) thinks that they are of both characters; but referring particularly to the Italian signs and the proper mode of discovering their meaning, observes that they are used primarily with words and from the usual accompaniment of certain phrases. "For these the gestures become substitutes, and then by association express all their meaning, even when used alone." This would be the process only where systematic gestures had never prevailed or had been so disused as to be forgotten, and were adopted after elaborate oral phrases and traditional oral expressions had become common. In other parts of this paper it is suggested that conventionality chiefly consists in abbreviation, and that signs are originally self-interpreting, independent of words, and therefore in a certain sense instinctive.

Another form of the above query, having the same intent, is whether signs are arbitrary or natural. The answer will depend upon what the observer considers to be natural to himself. A common sign among both deaf-mutes and Indians for *woman* consists in designating the

arrangement of the hair, but such a represented arrangement of hair familiar to the gesturer as had never been seen by the person addressed would not seem "natural" to the latter. It would be classed as arbitrary, and could not be understood without context or explanation, indeed without translation such as is required from foreign oral speech. Signs most naturally, that is, appropriately, expressing a conception of the thing signified, are first adopted and afterwards modified by circumstances of environment, so as to appear, without full understanding, conventional and arbitrary, yet they are as truly "natural" as the signs for hearing, seeing, eating, and drinking, which continue all over the world as they were first formed because there is no change in those operations.

CLASSES OF DIVERSITIES IN SIGNS.

While there is not sufficient evidence that any exhibition of sign language in any tribe is a dialect derived or corrupted from an ascertained language in any other tribe, it still is convenient to consider the different forms appearing in different tribes as several dialects (in the usual mode of using that term) of a common language. Every sign talker necessarily has, to some extent, a dialect of his own. No one can use sign language without original invention and without modification of the inventions of others; and all such new inventions and modifications have a tendency to spread and influence the production of other variations. The diversities thus occasioned are more distinct than that mere individuality of style or expression which may be likened to the differing chirography of men who write, although such individual characteristics also constitute an important element of confusion to the inexperienced observer. In differing handwriting there is always an attempt or desire to represent an alphabet which is essentially determinate, but no such fixedness or limited condition of form restricts gesture speech.

Those variations and diversities of form and connected significance specially calling for notice may be: 1st. In the nature of synonyms. 2d. Substantially the same form with such different signification as not to be synonymous. 3d. Difference in significance produced by such slight variation in form as to be, to a careless observer, *symmorphic.*

SYNONYMS.

In this division are placed signs of differing forms which are used in senses so nearly the same as to have only a slight shade of distinction, or sometimes to be practically interchangeable. The comprehensive and metaphorical character of signs renders more of them interchangeable than is the case with words; still, like words, some signs with essential resemblance of meaning have partial and subordinate differences made by etymology or usage. Doubtless signs are purposely selected as delineating the most striking outlines of an object, or the most characteristic features of an action; but different individuals, and

likewise different bodies of people, would not always agree in the selection of those outlines and features. Taking the illustration of the attempt to invent a sign for *bird*, before used, any one of a dozen signs might have been agreed upon with equal appropriateness, and, in fact, a number have been so selected by several individuals and tribes, each one, therefore, being a synonym of the other. Another example of this is in the signs for *deer*, designated by various modes of expressing fleetness, by his gait when not in rapid motion, by the shape of his horns, by the color of his tail, and sometimes by combinations of several of those characteristics. Each of these signs may be indefinitely abbreviated, and therefore create indefinite diversity. Another illustration, in which an association of ideas is apparent, is in the upward raising of the index in front of and above the head, which means *above* (sometimes containing the religious conception of *heaven*, *great spirit*, &c.), and also *now*, *to-day*. Not unfrequently these several signs to express the same ideas are used interchangeably by the same people, and some one of the duplicates or triplicates may have been noticed by separate observers to the exclusion of the others. On the other hand, they might all have been noticed, but each one among different bodies. Thus confusing reports would be received, which might either be erroneous in deducing the prevalence of particular signs or the opposite. Sometimes the synonym may be recognized as an imported sign, used with another tribe known to affect it. Sometimes the diverse signs to express the same thing are only different trials at reaching the intelligence of the person addressed. An account is given by Lieut. Heber M. Creel, Seventh Cavalry, U. S. A., of an old Cheyenne squaw, who made about twenty successive and original signs to a recruit of the Fourth Cavalry to let him know that she wanted to obtain out of a wagon a piece of cloth belonging to her, to wipe out an oven preparatory to baking bread. Thus by tradition, importation, recent invention, or from all these causes together, several signs entirely distinct are produced for the same object or action.

THE SAME SIGN WITH DIVERSE MEANINGS.

This class is not intended to embrace the cases common both to sign and oral language where the same sign has several meanings, according to the expression, whether facial or vocal, and the general manner accompanying its delivery. The sign given for "stop talking" on page 339 may be used in simple acquiescence, "very well," "all right!" or for comprehension, "I understand;" or in impatience, "you have talked enough!" which may be carried further to express actual anger in the violent "shut up!" But all these grades of thought accompany the idea of a cessation of talk. In like manner an acquaintance of the writer asking the same favor (a permission to go through their camp) of two chiefs, was answered by both with the sign generally used for repletion after eating, viz., the index and thumb turned toward the body, passed up from the abdomen to the throat; but in the one case, being made with a gentle motion and

pleasant look, it meant, "I am satisfied," and granted the request; in the other, made violently, with the accompaniment of a truculent frown, it read, "I have had enough of that!" But these two meanings might also have been expressed by different intonations of the English word "enough." The class of signs now in view is better exemplified by the French word *souris*, which is spelled and pronounced precisely the same with the two wholly distinct and independent significations of *smile* and *mouse*. From many examples may be selected the Omaha sign for *think*, *guess*, which is precisely the same as that of the Absaroka, Shoshoni and Banak for *brave*, see page 414. The context alone, both of the sign and the word, determines in what one of its senses it is at the time used, but it is not discriminated merely by a difference in expression.

It would have been very remarkable if precisely the same sign were not used by different or even the same persons or bodies of people with wholly distinct significations. The graphic forms for objects and ideas are much more likely to be coincident than sound is for similar expressions, yet in all oral languages the same precise sound is used for utterly diverse meanings. The first conception of many different objects must have been the same. It has been found, indeed, that the homophony of words and the homomorphy of ideographic pictures is noticeable in opposite significations, the conceptions arising from the opposition itself. The differentiation in portraiture or accent is a subsequent and remedial step not taken until after the confusion has been observed and become inconvenient. Such confusion and contradiction would only be eliminated if sign language were absolutely perfect as well as absolutely universal.

SYMMORPHS.

In this class are included those signs conveying different ideas, and really different in form of execution as well as in conception, yet in which the difference in form is so slight as practically to require attention and discrimination. An example from oral speech may be found in the English word "desert," which, as pronounced "des′-ert" or "desert′," and in a slightly changed form, "dessert," has such widely varying significations. These distinctions relating to signs require graphic illustration.

FIG. 112.

The sign made by the Dakota, Hidatsa, and several other tribes, for *tree* is made by holding the right hand before the body, back forward, fingers and thumb separated, then pushing it slightly upward, Fig. 112. That for *grass* is the same made near the ground; that for *grow* is made like *grass*, though instead of holding the back of the hand near the ground the hand is pushed upward in an interrupted manner, Fig. 113. For *smoke*, the hand (with the back down, fingers pointing upward as

FIG. 113.

in *grow*) is thrown upward several times from the same place instead of continuing the whole motion upward. Frequently the fingers are thrown forward from under the thumb with each successive upward motion. For *fire*, the hand is employed as in the gesture for *smoke*, but the motion is frequently more waving, and in other cases made higher from the ground.

The sign for *rain*, made by the Shoshoni, Apache, and other Indians, is by holding the hand (or hands) at the height of and before the shoulder, fingers pendent, palm down, then pushing it downward a short distance, Fig. 114. That for *heat* is the same, with the difference that the hand is held above the head and thrust downward toward the forehead; that for *to weep* is made by holding the hand as in *rain*, and the gesture made from the eye downward over the cheek, back of the fingers nearly touching the face.

Fig. 114.

The common sign for *sun* is made by bringing the tips of the thumb and index together so as to form a circle; remaining fingers closed. The hand is then held toward the sky, Fig. 115. The motion with the same circular position of index and thumb is for *want*, by bringing the hand backward toward the mouth, in a curve forming a short arch between the origin and termination of the gesture.

Fig. 115.

For *drink* the gesture by several tribes is the same as for *want*, with the slight difference in the position of the last three fingers, which are not so tightly clinched, forming somewhat the shape of a cup; and that for *money* is made by holding out the hand with the same arrangement of fingers in front of the hips, at a distance of about twelve or fifteen inches.

Another sign for *sun*, made by the Cheyennes, is by placing the tips of the partly separated thumb and index of one hand against those of the other, approximating a circle, and holding them toward the sky, Fig. 116, and that for *various things*, observed among the Brulé Sioux with the same position of the hands, is made by placing the circle horizontal, and moving it interruptedly toward the right side, each movement forming a short arch. Compare also the sign for *village*, described on page 386.

Fig. 116.

The Arikara sign for *soldier* is by placing the clinched hands together before the breast, thumbs touching, then drawing them horizontally outward toward their respective sides, Fig. 117. That for *done*, made by

the Hidatsa, is shown below in this paper, see Fig. 334, page 528. That for *much* (*Cheyenne* I, *Comanche* III), see Fig. 274, page 447, is to be correlated with the above.

The sign for *to be told* or *talked to*, and for the reception of speech, by the tribes generally, is made by placing the flat right hand, palm upward,

FIG. 117.

about fifteen inches in front of the right side of the face or breast, fingers pointing to the left, then drawing the hand toward the bottom of the chin, and is illustrated in Fig. 71, page 291. The Comanche sign for *give* or *asking* is shown in Fig. 301, page 480 (*Comanche* III), and is made by bringing the hand toward the body but a short distance, and the motion repeated, the tips of the fingers indicating the outline of a circle.

The tribal sign for *Kaiowa*, illustrated in its place among the TRIBAL SIGNS, is made by holding the hand with extended and separated fingers and thumb near the side of the head, back outward, and giving it a rotary motion. This gesture is made in front of the face by many tribes. The generic sign for *deer*, made by the Dakota and some others, is by holding the hand motionless at the side of the head, with extended and separated thumb and fingers, representing the branched antlers. That for *fool*, reported from the same Indians, is the same as above described for *Kaiowa*, which it also signifies, though frequently only one or two fingers are used.

The tribal sign both for the *Sahaptin* or *Nez Percés* and for *Caddo* (see TRIBAL SIGNS) is made by passing the extended index, pointing under the nose from right to left. When the second finger is not tightly closed it strongly resembles the sign often made for *lie*, *falsehood*, by passing the extended index and second fingers separated toward the left, over the mouth.

The tribal sign for Cheyenne (see TRIBAL SIGNS) differs from the sign for *spotted* only in the finger (or hand) in the latter being alternately passed across the upper and lower sides of the left forearm.

The sign for *steal*, *theft*, see Fig. 75, page 293, is but slightly different from that for *bear*, see Fig. 239, page 413, especially when the latter is made with one hand only. The distinction, however, is that the grasping in the latter sign is not followed by the idea of concealment in the former, which is executed by the right hand, after the motion of grasping, being brought toward and sometimes under the left armpit.

Cold and *winter*, see Tendoy-Huerito Dialogue, page 486, may be compared with *love*, see Kin Chē-ēss' speech, page 521, and with *prisoner*. In these the difference consists in that *cold* and *winter* are represented by crossing the arms with clinched hands before the breast; *love* by crossing the arms so as to bring the fists more under the chin, and *prisoner* by holding the crossed wrists a foot in front of the breast.

Melon, *squash*, *muskmelon*, used by the Utes and Apaches, is made by

holding the hand arched, fingers separated and pointing forward, and pushing the hand forward over a slight curve near the ground, and the generic sign for *animals* by the Apaches is made in the same manner at the height intended to represent the object.

The sign for *where?*, and *to search*, *to seek for*, made by the Dakota (IV), is by holding the back of the hand upward, index pointing forward, and carrying it from left to right about eight inches, raising and lowering it several times while so doing, as if quickly pointing at different objects. That for *some of them*, a part of a number of things or persons, made by the Kaiowa, Comanche, Wichita, and Apache Indians is nearly identical, the gesture being made less rapidly.

RESULTS SOUGHT IN THE STUDY OF SIGN LANGUAGE.

These may be divided into (1) its practical application, (2) its aid to philologic researches in general with (3) particular reference to the grammatic machinery of language, and (4) its archæologic relations.

PRACTICAL APPLICATION.

The most obvious application of Indian sign language will for its practical utility depend, to a large extent, upon the correctness of the view submitted by the present writer that it is not a mere semaphoric repetition of motions to be memorized from a limited traditional list, but is a cultivated art, founded upon principles which can be readily applied by travelers and officials, so as to give them much independence of professional interpreters—as a class dangerously deceitful and tricky. This advantage is not merely theoretical, but has been demonstrated to be practical by a professor in a deaf mute college who, lately visiting several of the wild tribes of the plains, made himself understood among all of them without knowing a word of any of their languages; nor would it only be experienced in connection with American tribes, being applicable to intercourse with savages in Africa and Asia, though it is not pretended to fulfill by this agency the schoolmen's dream of an ecumenical mode of communication between all peoples in spite of their dialectic divisions.

It must be admitted that the practical value of signs for intercourse with the American Indians will not long continue, their general progress in the acquisition of English or of Spanish being so rapid that those languages are becoming, to a surprising extent, the common medium, and signs are proportionally disused. Nor is a systematic use of signs of so great assistance in communicating with foreigners, whose speech is not understood, as might at first be supposed, unless indeed both parties agree to cease all attempt at oral language, relying wholly upon gestures. So long as words are used at all, signs will be made only as their accompaniment, and they will not always be ideographic.

An amusing instance in which savages showed their preference to signs instead of even an onomatope may be quoted from Wilfred Powell's *Observations on New Britain and neighboring Islands during Six Years' Exploration*, in *Proc. Roy. Geog. Soc.*, vol. iii, No. 2 (new monthly series), February, 1881, p. 89, 90: "On one occasion, wishing to purchase a pig, and not knowing very well how to set about it, being ignorant of the dialect, which is totally different from that of the natives in the north, I asked Mr. Brown how I should manage, or what he thought would be the best way of making them understand. He said, 'Why don't you try grunting?' whereupon I began to grunt most vociferously. The effect was magical. Some of them jumped back, holding their spears in readiness to throw; others ran away, covering their eyes with their hands, and all exhibited the utmost astonishment and alarm. In fact, it was so evident that they expected me to turn into a pig, and their alarm was so irresistibly comic, that Mr. Brown and I both burst out laughing, on which they gradually became more reassured, and those that had run away came back, and seeing us so heartily amused, and that I had not undergone any metamorphosis, began to laugh too; but when I drew a pig on the sand with a piece of stick, and made motions of eating, it suddenly seemed to strike them what was the matter, for they all burst out laughing, nodding their heads, and several of them ran off, evidently in quest of the pig that was required."

POWERS OF SIGNS COMPARED WITH SPEECH.

Sign language, being the mother utterance of nature, poetically styled by Lamartine the visible attitudes of the soul, is superior to all others in that it permits every one to find in nature an image to express his thoughts on the most needful matters intelligently to any other person. The direct or substantial natural analogy peculiar to it prevents a confusion of ideas. It is to some extent possible to use words without understanding them which yet may be understood by those addressed, but it is hardly possible to use signs without full comprehension of them. Separate words may also be comprehended by persons hearing them without the whole connected sense of the words taken together being caught, but signs are more intimately connected. Even those most appropriate will not be understood if the subject is beyond the comprehension of their beholders. They would be as unintelligible as the wild clicks of his instrument, in an electric storm, would be to the telegrapher, or as the semaphore, driven by wind, to the signalist. In oral speech even onomatopes are arbitrary, the most strictly natural sounds striking the ear of different individuals and nations in a manner wholly diverse. The instances given by SAYCE are in point. Exactly the same sound was intended to be reproduced in the "*bilbit* amphora" of Nævius, the "*glut glut* murmurat unda sonans" of the Latin Anthology, and the "*puls*" of Varro. The Persian "*bulbul*," the "*jugjug*" of Gascoigne, and the "*whitwhit*" of others are all attempts at imitating the note of the night-

ingale. Successful signs must have a much closer analogy and establish a *consensus* between the talkers far beyond that produced by the mere sound of words.

Gestures, in the degree of their pantomimic character, excel in graphic and dramatic effect applied to narrative and to rhetorical exhibition, and beyond any other mode of description give the force of reality. Speech, when highly cultivated, is better adapted to generalization and abstraction; therefore to logic and metaphysics. The latter must ever henceforth be the superior in formulating thoughts. Some of the enthusiasts in signs have contended that this unfavorable distinction is not from any inherent incapability, but because their employment has not been continued unto perfection, and that if they had been elaborated by the secular labor devoted to spoken language they might in resources and distinctiveness have exceeded many forms of the latter. Gallaudet, Peet, and others may be right in asserting that man could by his arms, hands, and fingers, with facial and bodily accentuation, express any idea that could be conveyed by words.

The combinations which can be made with corporeal signs are infinite. It has been before argued that a high degree of culture might have been attained by man without articulate speech and it is but a further step in the reasoning to conclude that if articulate speech had not been possessed or acquired, necessity would have developed gesture language to a degree far beyond any known exhibition of it. The continually advancing civilization and continually increasing intercourse of countless ages has perfected oral speech, and as both civilization and intercourse were possible with signs alone it is to be supposed that they would have advanced in some corresponding manner. But as sign language has been chiefly used during historic time either as a scaffolding around a more valuable structure to be thrown aside when the latter was completed, or as an occasional substitute, such development was not to be expected.

The process of forming signs to express abstract ideas is only a variant from that of oral speech, in which the words for the most abstract ideas, such as law, virtue, infinitude, and immortality, are shown by Max Müller to have been derived and deduced, that is, abstracted, from sensuous impressions. In the use of signs the countenance and manner as well as the tenor decide whether objects themselves are intended, or the forms, positions, qualities, and motions of other objects which are suggested, and signs for moral and intellectual ideas, founded on analogies, are common all over the world as well as among deaf-mutes. Concepts of the intangible and invisible are only learned through percepts of tangible and visible objects, whether finally expressed to the eye or to the ear, in terms of sight or of sound.

Sign language is so faithful to nature, and so essentially living in its expression, that it is not probable that it will ever die. It may become disused, but will revert. Its elements are ever natural and universal, by recurring to which the less natural signs adopted dialectically or for

expedition can always, with some circumlocution, be explained. This power of interpreting itself is a peculiar advantage, for spoken languages, unless explained by gestures or indications, can only be interpreted by means of some other spoken language. When highly cultivated, its rapidity on familiar subjects exceeds that of speech and approaches to that of thought itself. This statement may be startling to those who only notice that a selected spoken word may convey in an instant a meaning for which the motions of even an expert in signs may require a much longer time, but it must be considered that oral speech is now wholly conventional, and that with the similar development of sign language conventional expressions with hands and body could be made more quickly than with the vocal organs, because more organs could be worked at once. Without such supposed development the habitual communication between deaf-mutes and among Indians using signs is perhaps as rapid as between the ignorant class of speakers upon the same subjects, and in many instances the signs would win at a trial of speed. At the same time it must be admitted that great increase in rapidity is chiefly obtained by the system of preconcerted abbreviations, before explained, and by the adoption of arbitrary forms, in which naturalness is sacrificed and conventionality established, as has been the case with all spoken languages in the degree in which they have become copious and convenient.

There is another characteristic of the gesture speech that, though it cannot be resorted to in the dark, nor where the attention of the person addressed has not been otherwise attracted, it has the countervailing benefit of use when the voice could not be employed. This may be an advantage at a distance which the eye can reach, but not the ear, and still more frequently when silence or secrecy is desired. Dalgarno recommends it for use in the presence of great people, who ought not to be disturbed, and curiously enough "Disappearing Mist," the Iroquois chief, speaks of the former extensive use of signs in his tribe by women and boys as a mark of respect to warriors and elders, their voices, in the good old days, not being uplifted in the presence of the latter. The decay of that wholesome state of discipline, he thinks, accounts partly for the disappearance of the use of signs among the modern impudent youth and the dusky claimants of woman's rights.

An instance of the additional power gained to a speaker of ordinary language by the use of signs, impressed the writer while dictating to two amanuenses at the same moment, to the one by signs and the other by words, on different subjects, a practice which would have enabled Cæsar to surpass his celebrated feat. It would also be easy to talk to a deaf and blind man at once, the latter being addressed by the voice and the former in signs.

RELATIONS TO PHILOLOGY.

The aid to be derived from the study of sign language in prosecuting researches into the science of language was pointed out by LEIBNITZ, in

his *Collectanea Etymologica*, without hitherto exciting any thorough or scientific work in that direction, the obstacle to it probably being that scholars competent in other respects had no adequate data of the gesture speech of man to be used in comparison. The latter will, it is hoped, be supplied by the work now undertaken.

In the first part of this paper it was suggested that signs played an important part in giving meaning to spoken words. Philology, comparing the languages of earth in their radicals, must therefore include the graphic or manual presentation of thought, and compare the elements of ideography with those of phonics. Etymology now examines the ultimate roots, not the fanciful resemblances between oral forms, in the different tongues; the internal, not the mere external parts of language. A marked peculiarity of sign language consists in its limited number of radicals and the infinite combinations into which those radicals enter while still remaining distinctive. It is therefore a proper field for etymologic study.

From these and other considerations it is supposed that an analysis of the original conceptions of gestures, studied together with the holophrastic roots in the speech of the gesturers, may aid in the ascertainment of some relation between concrete ideas and words. Meaning does not adhere to the phonic presentation of thought, while it does to signs. The latter are doubtless more flexible and in that sense more mutable than words, but the ideas attached to them are persistent, and therefore there is not much greater metamorphosis in the signs than in the cognitions. The further a language has been developed from its primordial roots, which have been twisted into forms no longer suggesting any reason for their original selection, and the more the primitive significance of its words has disappeared, the fewer points of contact can it retain with signs. The higher languages are more precise because the consciousness of the derivation of most of their words is lost, so that they have become counters, good for any sense agreed upon and for no other.

It is, however, possible to ascertain the included gesture even in many English words. The class represented by the word *supercilious* will occur to all readers, but one or two examples may be given not so obvious and more immediately connected with the gestures of our Indians. *Imbecile*, generally applied to the weakness of old age, is derived from the Latin *in*, in the sense of on, and *bacillum*, a staff, which at once recalls the Cheyenne sign for *old man*, mentioned above, page 339. So *time* appears more nearly connected with τείνω, to stretch, when information is given of the sign for *long time*, in the Speech of Kin Chē-ēss, in this paper, viz., placing the thumbs and forefingers in such a position as if a small thread was held between the thumb and forefinger of each hand, the hands first touching each other, and then moving slowly from each other, as if *stretching* a piece of gum-elastic.

In the languages of North America, which have not become arbitrary to the degree exhibited by those of civilized man, the connection be-

tween the idea and the word is only less obvious than that still unbroken between the idea and the sign, and they remain strongly affected by the concepts of outline, form, place, position, and feature on which gesture is founded, while they are similar in their fertile combination of radicals.

Indian language consists of a series of words that are but slightly differentiated parts of speech following each other in the order suggested in the mind of the speaker without absolute laws of arrangement, as its sentences are not completely integrated. The sentence necessitates parts of speech, and parts of speech are possible only when a language has reached that stage where sentences are logically constructed. The words of an Indian tongue, being synthetic or undifferentiated parts of speech, are in this respect strictly analogous to the gesture elements which enter into a sign language. The study of the latter is therefore valuable for comparison with the words of the former. The one language throws much light upon the other, and neither can be studied to the best advantage without a knowledge of the other.

Some special resemblances between the language of signs and the character of the oral languages found on this continent may be mentioned. Dr. J. HAMMOND TRUMBULL remarks of the composition of their words that they were "so constructed as to be thoroughly self-defining and immediately intelligible to the hearer." In another connection the remark is further enforced: "Indeed, it is a requirement of the Indian languages that every word shall be so framed as to admit of immediate resolution to its significant elements by the hearer. It must be thoroughly *self-defining*, for (as Max Müller has expressed it) 'it requires tradition, society, and literature to maintain words which can no longer be analyzed at once.' * * * In the ever-shifting state of a nomadic society no debased coin can be tolerated in language, no obscure legend accepted on trust. The metal must be pure and the legend distinct."

Indian languages, like those of higher development, sometimes exhibit changes of form by the permutation of vowels, but often an incorporated particle, whether suffix, affix, or infix, shows the etymology which often, also, exhibits the same objective conception that would be executed in gesture. There are, for instance, different forms for standing, sitting, lying, falling, &c., and for standing, sitting, lying on or falling from the same level or a higher or lower level. This resembles the pictorial conception and execution of signs.

Major J. W. POWELL, with particular reference to the disadvantages of the multiplied inflections in Indian languages, alike with the Greek and Latin, when the speaker is compelled, in the choice of a word to express his idea, to think of a great multiplicity of things, gives the following instance:

"A Ponca Indian in saying that a man killed a rabbit, would have to say: the man, he, one, animate, standing, in the nominative case, purposely killed, by shooting an arrow, the rabbit, he, the one, animate, sitting, in the objective case; for the form of a verb to kill would have

to be selected, and the verb changes its form by inflection and incorporated particles to denote person, number, and gender as animate or inanimate, and gender as standing, sitting, or lying, and case; and the form of the verb would also express whether the killing was done accidentally or purposely, and whether it was by shooting or by some other process, and, if by shooting, whether by bow and arrow, or with a gun; and the form of the verb would in like manner have to express all of these things relating to the object; that is, the person, number, gender, and case of the object; and from the multiplicity of paradigmatic forms of the verb to kill, this particular one would have to be selected." This is substantially the mode in which an Indian sign talker would find it necessary to tell the story, as is shown by several examples given below in narratives, speeches, and dialogues.

Indian languages exhibit the same fondness for demonstration which is necessary in sign language. The two forms of utterance are alike in their want of power to express certain words, such as the verb "to be," and in the criterion of organization, so far as concerns a high degree of synthesis and imperfect differentiation, they bear substantially the same relation to the English language.

It may finally be added that as not only proper names but nouns generally in Indian languages are connotive, predicating some attribute of the object, they can readily be expressed by gesture signs, and therefore among them, if anywhere, it is to be expected that relations may be established between the words and the signs.

ETYMOLOGY OF WORDS FROM GESTURES.

There can be no attempt in the present limits to trace the etymology of any large number of words in the several Indian languages to a gestural origin, nor, if the space allowed, would it be satisfactory. The signs have scarcely yet been collected, verified, and collated in sufficient numbers for such comparison, even with the few of the Indian languages the radicals of which have been scientifically studied. The signs will, in a future work, be frequently presented in connection with the corresponding words of the gesturers, as is done now in a few instances in another part of this paper. For the present the subject is only indicated by the following examples, introduced to suggest the character of the study in which the students of American linguistics are urgently requested to assist:

The Dakota word *Sha^{n}te-suta*—from *sha^{n}te*, heart, and *suta*, strong—*brave*, not cowardly, literally strong-hearted, is made by several tribes of that stock, and particularly by the Brulé Sioux, in gestures by collecting the tips of the fingers and thumb of the right hand to a point, and then placing the radial side of the hand over the heart, finger tips pointing downward—*heart;* then place the left fist, palm inward, horizontally before the lower portion of the breast, the right fist back of the

left, then raise the right and throw it forcibly over and downward in front of the left—*brave, strong.* See Fig. 242, page 415.

The Arikaras make the sign for *brave* by striking the clinched fist forcibly toward the ground in front of and near the breast.

Brave, or "strong-hearted," is made by the Absaroka, Shoshoni, and Banak Indians by merely placing the clinched fist to the breast, the latter having allusion to the heart, the clinching of the hand to strength, vigor, or force.

An Ojibwa sign for *death, to die*, is as follows:

Place the palm of the hand at a short distance from the side of the head, then withdraw it gently in an oblique downward direction, inclining the head and upper part of the body in the same direction.

The same authority, The Very Rev. E. Jacker, who contributes it, notes that there is an apparent connection between this conception and execution and the etymology of the corresponding terms in Ojibwa. "He dies," is *nibo;* "he sleeps," is *niba.* The common idea expressed by the gesture is a sinking to rest. The original significance of the root *nib* seems to be "leaning;" *anibeia*, "it is leaning"; *anibekweni*, "he inclines the head sidewards." The word *niba* or *nibe* (only in compounds) conveys the idea of "night," perhaps as the falling over, the going to rest, or the death of the day.

Ogima, the Ojibwa term for *chief*, is derived from a root which signifies "above" (*Ogidjaii*, upon; *ogidjina*, above; *ogidaki*, on a hill or mountain, etc.). *Ogitchida*, a brave, a hero (Otawa, *ogiḍa*), is probably from the same root.

Sagima, the Ojibwa form of sachem, is from the root *sag*, which implies a coming forth, or stretching out. These roots are to be considered in connection with several gestures described under the head of *Chief*, in EXTRACTS FROM DICTIONARY, *infra.*

Onijishin, it is *good* (Ojibwa), originally signifies "it lies level." This may be compared with the sign for *good*, in the Tendoy-Huerito Dialogue, Fig. 309, page 487, and also that for *happy, contentment*, in the Speech of Kin Chē-ëss, page 523.

In Klamath the radix *lam* designates a whirling motion, and appears in the word *láma*, "to be crazy, mad," readily correlated with the common gesture for *madman* and *fool*, in which the hand is rotated above and near the head.

Evening, in Klamath, is *litkhí*, from *luta*, to hang down, meaning the time when the sun hangs down, the gesture for which, described elsewhere in this paper (see Nátci's Narrative, page 503), is executive of the same conception, which is allied to the etymology usually given for *eve, even*, "the decline of the day." These Klamath etymologies have been kindly contributed by Mr. A. S. Gatschet.

The Very Rev. E. Jacker also communicates a suggestive *excursus exegeticus* upon the probable gestural origin of the Ojibwa word *tibishko*, "opposite in space; just so; likewise:"

"The adverb *tibishko* (or *dibishko*) is an offshoot of the root *tib* (or *dib*),

which in most cases conveys the idea of measuring or weighing, as appears from the following samples: *dibaige*, he measures; *dibowe*, he settles matters by his speech or word, *e. g.*, as a juryman; *dibaamage*, he pays out; *dibakonige*, he judges; *dibabishkodjige*, he weighs; *dibamenimo*, he restricts himself, *e. g.*, to a certain quantity of food; *dibissitchige*, he fulfills a promise; *dibijigan*, a pattern for cutting clothes.

"The original meaning of *tib*, however, must be supposed to have been more comprehensive, if we would explain other (apparent) derivatives, such as: *tibi*, 'I don't know where, where to, where from,' &c; *tibik*, night; *dibendjige*, he is master or owner; *titibisse*, it rolls (as a ball), it turns (as a wheel); *dibaboweigan*, the cover of a kettle. The notion of measuring does not very naturally enter into the ideas expressed by these terms.

"The difficulty disappears if we assume the root *tib* or *dib* to have been originally the phonetic equivalent of a *gesture* expressive of the notion of covering as well as of that of measuring. This gesture would seem to be the holding of one hand above the other, horizontally, at some distance, palms opposite or both downwards. This, or some similar gesture would most naturally accompany the above terms. As for *tibik*, night, compare (*Dunbar*): 'The two hands open and extended, crossing one another horizontally.' The idea of covering evidently enters into this conception. The strange adverb *tibi* ('I don't know where,' &c., or 'in a place unknown to me'), if derived from the same root, would originally signify 'covered.' In *titibisse*, or *dididisse* (it rolls, it turns), the reduplication of the radical syllable indicates the repetition of the gesture, by holding the hands alternately above one another, palms downwards, and thus producing a rotary motion.

"In German, the clasping of the hands in a horizontal position, expressive of a promise or the conclusion of a bargain, is frequently accompanied by the interjection *top!* the same radical consonants as in *tib*. Compare also the English *tap*, the French *tape*, the Greek, τύπτω the Sanscrit *tup* and *tub*, &c."

GESTURES CONNECTED WITH THE ORIGIN OF WRITING.

Though written characters are generally associated with speech, they are shown, by successful employment in hieroglyphs and by educated deaf-mutes to be representative of ideas without the intervention of sounds, and so also are the outlines of signs. This will be more apparent if the motions expressing the most prominent feature, attribute, or function of an object are made, or supposed to be made, so as to leave a luminous track impressible upon the eye separate from the members producing it. The actual result is an immateriate graphic representation of visible objects and qualities which, invested with substance, has become familiar to us as the *rebus*, and also appears in the form of heraldic blazonry styled punning or "canting."

Gesture language is, in fact, not only a picture language, but is actual writing, though dissolving and sympathetic, and neither alphabetic nor phonetic.

Dalgarno aptly says: "*Qui enim caput nutat, oculo connivet, digitum movet in aëre, &c., (ad mentis cogitata exprimendum); is non minus vere scribit, quam qui Literas pingit in Charta, Marmore, vel ære.*"

It is neither necessary nor proper to enter now upon any prolonged account of the origin of alphabetic writing. There is, however, propriety, if not necessity, for the present writer, when making any remarks under this heading and under some others in this paper indicating special lines of research, to disclaim all pretension to being a Sinologue or Egyptologist, or even profoundly versed in Mexican antiquities. His partial and recently commenced studies only enable him to present suggestions for the examination of scholars. These suggestions may safely be introduced by the statement that the common modern alphabetic characters, coming directly from the Romans, were obtained by them from the Greeks, and by the latter from the Phœnicians, whose alphabet was connected with that of the old Hebrew. It has also been of late the general opinion that the whole family of alphabets to which the Greek, Latin, Gothic, Runic, and others belong, appearing earlier in the Phœnician, Moabite, and Hebrew, had its beginning in the ideographic pictures of the Egyptians, afterwards used by them to express sounds. That the Chinese, though in a different manner from the Egyptians, passed from picture writing to phonetic writing, is established by delineations still extant among them, called *ku-wân*, or "ancient pictures," with which some of the modern written characters can be identified. The ancient Mexicans also, to some extent, developed phonetic expressions out of a very elaborate system of ideographic picture writing. Assuming that ideographic pictures made by ancient peoples would be likely to contain representations of gesture signs, which subject is treated of below, it is proper to examine if traces of such gesture signs may not be found in the Egyptian, Chinese, and Aztec characters. Only a few presumptive examples, selected from a considerable number, are now presented in which the signs of the North American Indians appear to be included, with the hope that further investigation by collaborators will establish many more instances not confined to Indian signs.

A typical sign made by the Indians for *no*, *negation*, is as follows: The hand extended or slightly curved is held in front of the body, a little to the right of the median line; it is then carried with a rapid sweep a foot or more farther to the right. (*Mandan and Hidatsa* I.)

One for *none*, *nothing*, sometimes used for simple negation, is also given: Throw both hands outward toward their respective sides from the breast. (*Wyandot* I.)

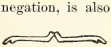

Fig. 118.

With these compare the two forms of the Egyptian character for *no*, *negation*, Fig. 118, taken from Champollion, *Grammaire Égyptienne*, *Paris*, 1836, p. 519.

No vivid fancy is needed to see the hands indicated at the extremities of arms extended symmetrically from the body on each side.

Also compare the Maya character for the same idea of negation,

Fig. 119, found in Landa, *Relation des Choses de Yucatan, Paris*, 1864, 316. The Maya word for negation is "*ma*," and the word "*mak*," a six-foot measuring rod, given by Brasseur de Bourbourg in his dictionary, apparently having connection with this character, would in use separate the hands as illustrated, giving the same form as the gesture made without the rod.

Fig. 119.

Another sign for *nothing, none*, made by the Comanches, is: Flat hand thrown forward, back to the ground, fingers pointing forward and downward. Frequently the right hand is brushed over the left thus thrown out.

Compare the Chinese character for the same meaning, Fig. 120. This will not be recognized as a hand without study of similar characters, which generally have a cross-line cutting off the wrist. Here the wrist bones follow under the cross cut, then the metacarpal bones, and last the fingers, pointing forward and downward.

Fig. 120.

The Arapaho sign for *child, baby*, is the forefinger in the mouth, *i. e.*, a nursing child, and a natural sign of a deaf-mute is the same. The Egyptian figurative character for the same is seen in Fig. 121. Its linear form is Fig. 122, and its hieratic is Fig. 123 (Champollion, *Dictionnaire Égyptien, Paris*, 1841, p. 31.)

Fig. 121.

Fig. 122.

Fig. 123.

These afford an interpretation to the ancient Chinese form for *son*, Fig. 124, given in *Journ. Royal Asiatic Society*, I, 1834, p. 219, as belonging to the Shang dynasty, 1756, 1112 B. C., and the modern Chinese form, Fig. 125, which, without the comparison, would not be supposed to have any pictured reference to an infant with hand or finger at or approaching the mouth, denoting the taking of nourishment. Having now suggested this, the Chinese character for *birth*, Fig. 126, is understood as the expression of a common gesture among the Indians, particularly reported from the Dakota; for *born, to be born*, viz: Place the left hand in front of the body, a little to the right, the palm downward and slightly arched, then pass the extended right hand downward, forward, and upward, forming a short curve underneath the left, as in Fig. 127 (*Dakota* V). This is based upon the curve followed by the head of the child during birth, and is used generically. The same curve, when made with one hand, appears in Fig. 128.

Fig. 124.

Fig. 125.

Fig. 126.

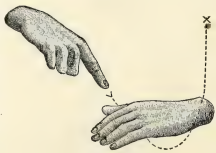
Fig. 127.

It may be of interest to compare with the Chinese *child* the Mexican

abbreviated character for *man*, Fig. 129, found in Pipart in *Compte Rendu du Cong. Inter. des Américanistes*, 2me *Session*, *Luxembourg*, 1877, 1878, II, 359. The figure on the right is called the abbreviated form of that by its side, yet its origin may be different.

The Chinese character for *man*, is Fig. 130, and may have the same obvious conception as a Dakota sign for the same signification: "Place the extended index, pointing upward and forward before the lower portion of the abdomen."

FIG 129.

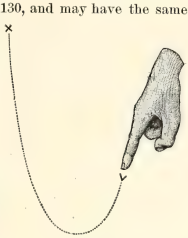
FIG. 128.

The Chinese specific character for *woman* is Fig. 131, the cross mark denoting the wrist, and if the remainder be considered the hand, the fingers may be imagined in the position made by many tribes, and especially the Utes, as depicting the *pudendum muliebre*, Fig. 132.

FIG. 130.

FIG. 131.

The Egyptian generic character for *female* is (Champollion, *Dict.*,) believed to represent the curve of the mammæ supposed to be cut off or separated from the chest, and the gesture with the same meaning was made by the Cheyenne Titchkematski, and photographed, as in Fig. 133. It forms the same figure as the Egyptian character as well as can be done by a position of the human hand.

FIG. 132.

FIG. 133.

The Chinese character for *to give water* is Fig. 134, which may be compared with the common Indian gesture *to drink*, *to give water*, viz: "Hand held with tips of fingers brought together and passed to the mouth, as if scooping up water", Fig. 135, obviously from the primitive custom, as with Mojaves, who still drink with scooped hands.

FIG. 134.

FIG. 135.

Another common Indian gesture sign for *water to drink*, *I want to drink*, is: "Hand brought downward past the mouth with loosely extended fingers, palm toward the face." This appears in the Mexican character for *drink*, Fig. 136, taken from Pipart, *loc. cit.*, p. 351. *Water*, *i. e.*, the pouring out of water with the drops falling or about to fall, is shown in Fig. 137, taken from the same author (p. 349), being the same arrangement of them as in the sign for *rain*, Fig. 114, p. 344, the hand, however, being inverted. *Rain* in the Mexican picture writing is shown by small circles inclosing a dot, as in the last two figures, but not connected together, each having a short line upward marking the line of descent.

FIG. 136.

FIG. 137.

With the gesture for *drink* may be compared Fig. 138, the Egyptian Goddess Nu in the sacred sycamore tree, pouring out the water of life to the Osirian and his soul, represented as a bird, in Amenti (Sharpe, from a funereal stelé in the British Museum, in *Cooper's Serpent Myths*, p. 43).

FIG. 138.

The common Indian gesture for *river* or *stream*, *water*, is made by passing the horizontal flat hand, palm down, forward and to the left from the right side in a serpentine manner.

The Egyptian character for the same is Fig. 139 (Champollion, *Dict.*, p. 429). The broken line is held to represent the movement of the water on the surface of the stream. When made with one line less angular and more waving it means *water*. It is interesting to compare with this the identical character in the syllabary invented by a West African negro, Mormoru Doalu Bukere, for *water*, ~~~, mentioned by TYLOR in his *Early History of Mankind*, p. 103.

FIG. 139.

The abbreviated Egyptian sign for *water* as a stream is Fig. 140 (Champollion, *loc. cit.*), and the Chinese for the same is as in Fig. 141.

In the picture-writing of the Ojibwa the Eyptian abbreviated character, with two lines instead of three, appears with the same signification.

FIG. 140.

FIG. 141.

The Egyptian character for *weep*, Fig. 142, an eye, with tears falling, is also found in the pictographs of the Ojibwa (Schoolcraft, I, pl. 54, Fig. 27), and is also made by the Indian gesture of drawing lines by the index repeatedly downward from the eye, though perhaps more frequently made by the full sign for *rain*, described on page 344, made with the back of the hand downward from the eye—"eye rain."

FIG. 142.

The Egyptian character for *to be strong* is Fig. 143 (Champollion, *Dict*, p. 91), which is sufficiently obvious, but may be compared with the sign for *strong*, made by some tribes as follows: Hold the clinched fist in front of the right side, a little higher than the elbow, then throw it forcibly about six inches toward the ground.

FIG. 143.

A typical gesture for *night* is as follows: Place the flat hands, horizontally, about two feet apart, move them quickly in an upward curve toward one another until the right lies across the left. "Darkness covers all." See Fig. 312, page 489.

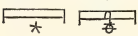

FIG. 144.

The conception of covering executed by delineating the object covered beneath the middle point of an arch or curve, appears also clearly in the Egyptian characters for *night*, Fig. 144 (Champollion, *Dict.*, p. 3).

The upper part of the character is taken separately to form that for *sky* (see page 372, *infra*).

The Egyptian figurative and linear characters, Figs. 145 and 146 (Champollion, *Dict.*, p. 28), for *calling upon* and *invocation*, also used as an interjection, scarcely require the quotation of an Indian sign, being common all over the world.

FIG. 145.

The gesture sign made by several tribes for *many* is as follows: Both hands, with spread and slightly curved fingers, are held pendent about two feet apart before the thighs; then bring them toward one another, horizontally, drawing them upward as they come together. (*Absaroka* I; *Shoshoni and Banak* I; *Kaiowa* I; *Comanche* III; *Apache* II; *Wichita* II.) "An accumulation of objects." This may be the same motion indicated by the Egyptian character, Fig. 147, meaning to *gather together* (Champollion, *Dict.*, p. 459).

FIG. 146.

FIG. 147.

The Egyptian character, Fig. 148, which in its linear form is represented in Fig. 149, and meaning to *go*, to *come*, *locomotion*, is presented to show readers unfamiliar with hieroglyphics how a corporeal action may be included in a linear character without being obvious or at least certain, unless it should be made clear by comparison with the full figurative form or by other means. This linear form might be noticed many times without certainty or perhaps suspicion that it represented the human legs and feet in the act of walking. The same difficulty, of course, as also the same prospect of success by careful research, attends the tracing of other corporeal motions which more properly come under the head of gesture signs.

FIG. 148.

FIG. 149.

SIGN LANGUAGE WITH REFERENCE TO GRAMMAR.

Apart from the more material and substantive relations between signs and language, it is to be expected that analogies can by proper research be ascertained between their several developments in the manner of their use, that is, in their grammatic mechanism, and in the genesis of the sentence. The science of language, ever henceforward to be studied historically, must take account of the similar early mental processes in which the phrase or sentence originated, both in sign and oral utterance. In this respect, as in many others, the North American Indians may be considered to be living representatives of prehistoric man.

SYNTAX.

The reader will understand without explanation that there is in the gesture speech no organized sentence such as is integrated in the languages of civilization, and that he must not look for articles or particles or passive voice or case or grammatic gender, or even what appears in those languages as a substantive or a verb, as a subject or a predicate, or as qualifiers or inflexions. The sign radicals, without being specifically any of our parts of speech, may be all of them in turn. There is, how-

ever, a grouping and sequence of the ideographic pictures, an arrangement of signs in connected succession, which may be classed under the scholastic head of syntax. This subject, with special reference to the order of deaf-mute signs as compared with oral speech, has been the theme of much discussion, some notes of which, condensed from the speculations of M. Rémi Valade and others, follow in the next paragraph without further comment than may invite attention to the profound remark of LEIBNITZ.

In mimic construction there are to be considered both the order in which the signs succeed one another and the relative positions in which they are made, the latter remaining longer in the memory than the former, and spoken language may sometimes in its early infancy have reproduced the ideas of a sign picture without commencing from the same point. So the order, as in Greek and Latin, is very variable. In nations among whom the alphabet was introduced without the intermediary to any impressive degree of picture-writing, the order being (1) language of signs, almost superseded by (2) spoken language, and (3) alphabetic writing, men would write in the order in which they had been accustomed to speak. But if at a time when spoken language was still rudimentary, intercourse being mainly carried on by signs, figurative writing had been invented, the order of the figures would be the order of the signs, and the same order would pass into the spoken language. Hence LEIBNITZ says truly that "the writing of the Chinese might seem to have been invented by a deaf person." The oral language has not known the phases which have given to the Indo-European tongues their formation and grammatical parts. In the latter, signs were conquered by speech, while in the former, speech received the yoke.

Sign language cannot show by inflection the reciprocal dependence of words and sentences. Degrees of motion corresponding with vocal intonation are only used rhetorically or for degrees of comparison. The relations of ideas and objects are therefore expressed by placement, and their connection is established when necessary by the abstraction of ideas. The sign talker is an artist, grouping persons and things so as to show the relations between them, and the effect is that which is seen in a picture. But though the artist has the advantage in presenting in a permanent connected scene the result of several transient signs, he can only present it as it appears at a single moment. The sign talker has the succession of time at his disposal, and his scenes move and act, are localized and animated, and their arrangement is therefore more varied and significant.

It is not satisfactory to give the order of equivalent words as representative of the order of signs, because the pictorial arrangement is wholly lost; but adopting this expedient as a mere illustration of the sequence in the presentation of signs by deaf-mutes, the following is quoted from an essay by Rev. J. R. Keep, in *American Annals of the*

Deaf and Dumb, vol. xvi, p. 223, as the order in which the parable of the Prodigal Son is translated into signs:

"Once, man one, sons two. Son younger say, Father property your divide: part my, me give. Father so.—Son each, part his give. Days few after, son younger money all take, country far go, money spend, wine drink, food nice eat. Money by and by gone all. Country everywhere food little: son hungry very. Go seek man any, me hire. Gentleman meet. Gentleman son send field swine feed. Son swine husks eat, see—self husks eat want—cannot—husks him give nobody. Son thinks, say, father my, servants many, bread enough, part give away can—I none—starve, die. I decide: Father I go to, say I bad, God disobey, you disobey—name my hereafter *son*, no—I unworthy. You me work give servant like. So son begin go. Father far look: son see, pity, run, meet, embrace. Son father say, I bad, you disobey, God disobey—name my hereafter *son*, no—I unworthy. But father servants call, command robe best bring, son put on, ring finger put on, shoes feet put on, calf fat bring, kill. We all eat, merry. Why? Son this my formerly dead, now alive: formerly lost, now found: rejoice."

It may be remarked, not only from this example, but from general study, that the verb "to be" as a copula or predicant does not have any place in sign language. It is shown, however, among deaf-mutes as an assertion of presence or existence by a sign of stretching the arms and hands forward and then adding the sign of affirmation. *Time* as referred to in the conjunctions *when* and *then* is not gestured. Instead of the form, "When I have had a sleep I will go to the river," or "After sleeping I will go to the river," both deaf-mutes and Indians would express the intention by "Sleep done, I river go." Though time present, past, and future is readily expressed in signs (see page 366), it is done once for all in the connection to which it belongs, and once established is not repeated by any subsequent intimation, as is commonly the case in oral speech. Inversion, by which the object is placed before the action, is a striking feature of the language of deaf-mutes, and it appears to follow the natural method by which objects and actions enter into the mental conception. In striking a rock the natural conception is not first of the abstract idea of striking or of sending a stroke into vacancy, seeing nothing and having no intention of striking anything in particular, when suddenly a rock rises up to the mental vision and receives the blow; the order is that the man sees the rock, has the intention to strike it, and does so; therefore he gestures, "I rock strike." For further illustration of this subject, a deaf-mute boy, giving in signs the compound action of a man shooting a bird from a tree, first represented the tree, then the bird as alighting upon it, then a hunter coming toward and looking at it, taking aim with a gun, then the report of the latter and the falling and the dying gasps of the bird. These are undoubtedly the successive steps that an artist would have taken in drawing the picture, or rather successive pictures, to illustrate the story. It is, how-

ever, urged that this pictorial order natural to deaf-mutes is not natural to the congenitally blind who are not deaf-mute, among whom it is found to be rythmical. It is asserted that blind persons not carefully educated usually converse in a metrical cadence, the action usually coming first in the structure of the sentence. The deduction is that all the senses when intact enter into the mode of intellectual conception in proportion to their relative sensitiveness and intensity, and hence no one mode of ideation can be insisted on as normal to the exclusion of others.

Whether or not the above statement concerning the blind is true, the conceptions and presentations of deaf-mutes and of Indians using sign language because they cannot communicate by speech, are confined to optic and, therefore, to pictorial arrangement.

The abbé Sicard, dissatisfied with the want of tenses and conjunctions, indeed of most of the modern parts of speech, in the natural signs, and with their inverted order, attempted to construct a new language of signs, in which the words should be given in the order of the French or other spoken language adopted, which of course required him to supply a sign for every word of spoken language. Signs, whatever their character, could not become associated with words, or suggest them, until words had been learned. The first step, therefore, was to explain by means of natural signs, as distinct from the new signs styled methodical, the meaning of a passage of verbal language. Then each word was taken separately and a sign affixed to it, which was to be learned by the pupil. If the word represented a physical object, the sign would be the same as the natural sign, and would be already understood, provided the object had been seen and was familiar; and in all cases the endeavor was to have the sign convey as strong a suggestion of the meaning of the word as was possible. The final step was to gesticulate these signs, thus associated with words, in the exact order in which the words were to stand in a sentence. Then the pupil would write the very words desired in the exact order desired. If the previous explanation in natural signs had not been sufficiently full and careful, he would not understand the passage. The methodical signs did not profess to give him the ideas, except in a very limited degree, but only to show him how to express ideas according to the order and methods of spoken language. As there were no repetitions of time in narratives in the sign language, it became necessary to unite with the word-sign for verbs others, to indicate the different tenses of the verbs, and so by degrees the methodical signs not only were required to comprise signs for every word, but also, with every such sign, a grammatical sign to indicate what part of speech the word was, and, in the case of verbs, still other signs to show their tenses and corresponding inflections. It was, as Dr. Peet remarks, a cumbrous and unwieldly vehicle, ready at every step to break down under the weight of its own machinery. Nevertheless, it was industriously taught in all our schools from the date of the found-

ing of the American Asylum in 1817 down to about the year 1835, when it was abandoned.

The collection of narratives, speeches, and dialogues of our Indians in sign language, first systematically commenced by the present writer, several examples of which are in this paper, has not yet been sufficiently complete and exact to establish conclusions on the subject of the syntactic arrangement of their signs. So far as studied it seems to be similar to that of deaf-mutes and to retain the characteristic of pantomimes in figuring first the principal idea and adding the accessories successively in the order of importance, the ideographic expressions being in the ideologic order. If the examples given are not enough to establish general rules of construction, they at least show the natural order of ideas in the minds of the gesturers and the several modes of inversion by which they pass from the known to the unknown, beginning with the dominant idea or that supposed to be best known. Some special instances of expedients other than strictly syntactic coming under the machinery broadly designated as grammar may be mentioned.

DEGREES OF COMPARISON.

Degrees of comparison are frequently expressed, both by deaf mutes and by Indians, by adding to the generic or descriptive sign that for "big" or "little." *Damp* would be "wet—little"; *cool*, "cold—little"; *hot*, "warm—much." The amount or force of motion also often indicates corresponding diminution or augmentation, but sometimes expresses a different shade of meaning, as is reported by Dr. Matthews with reference to the sign for *bad* and *contempt*, see page 411. This change in degree of motion is, however, often used for emphasis only, as is the raising of the voice in speech or italicizing and capitalizing in print. The Prince of Wied gives an instance of a comparison in his sign for *excessively hard*, first giving that for *hard*, viz: Open the left hand, and strike against it several times with the right (with the backs of the fingers). Afterwards he gives *hard*, *excessively*, as follows: Sign for *hard*, then place the left index-finger upon the right shoulder, at the same time extend and raise the right arm high, extending the index-finger upward, perpendicularly.

Rev. G. L. Deffenbaugh describes what may perhaps be regarded as an intensive sign among the Sahaptins in connection with the sign for *good; i. e., very good.* "Place the left hand in position in front of the body with all fingers closed except first, thumb lying on second, then with forefinger of right hand extended in same way point to end of forefinger of left hand, move it up the arm till near the body and then to a point in front of breast to make the sign *good*." For the latter see EXTRACTS FROM DICTIONARY page 487, *infra*. The same special motion is prefixed to the sign for *bad* as an intensive.

Another intensive is reported by Mr. Benjamin Clark, interpreter at the Kaiowa, Comanche, and Wichita agency, Indian Territory, in which after the sign for *bad* is made, that for *strong* is used by the Comanches

as follows: Place the clinched left fist horizontally in front of the breast, back forward, then pass the palmar side of the right fist downward in front of the knuckles of the left.

Dr. W. H. Corbusier, assistant surgeon U. S. A., writes as follows in response to a special inquiry on the subject: "By carrying the right fist from behind forward over the left, instead of beginning the motion six inches above it, the Arapaho sign for *strong* is made. For *brave*, first strike the chest over the heart with the right fist two or three times, and then make the sign for *strong*.

"The sign for *strong* expresses the superlative when used with other signs; with coward it denotes a base coward; with hunger, starvation; and with sorrow, bitter sorrow. I have not seen it used with the sign for pleasure or that of hunger, nor can I learn that it is ever used with them."

OPPOSITION.

The principle of opposition, as between the right and left hands, and between the thumb and forefinger and the little finger, appears among Indians in some expressions for "above," "below," "forward," "back," but is not so common as among the methodical, distinguished from the natural, signs of deaf-mutes. It is also connected with the attempt to express degrees of comparison. *Above* is sometimes expressed by holding the left hand horizontal, and in front of the body, fingers open, but joined together, palm upward. The right hand is then placed horizontal, fingers open but joined, palm downward, an inch or more above the left, and raised and lowered a few inches several times, the left hand being perfectly still. If the thing indicated as "above" is only a *little* above, this concludes the sign, but if it be *considerably* above, the right hand is raised higher and higher as the height to be expressed is greater, until, if *enormously* above, the Indian will raise his right hand as high as possible, and, fixing his eyes on the zenith, emit a duplicate grunt, the more prolonged as he desires to express the greater height. All this time the left hand is held perfectly motionless. *Below* is gestured in a corresponding manner, all movement being made by the left or lower hand, the right being held motionless, palm downward, and the eyes looking down.

The code of the Cistercian monks was based in large part on a system of opposition which seems to have been wrought out by an elaborate process of invention rather than by spontaneous figuration, and is more of mnemonic than suggestive value. They made two fingers at the right side of the nose stand for "friend," and the same at the left side for "enemy," by some fanciful connection with right and wrong, and placed the little finger on the tip of the nose for "fool" merely because it had been decided to put the forefinger there for "wise man."

PROPER NAMES.

It is well known that the names of Indians are almost always connotive, and particularly that they generally refer to some animal, predicating

often some attribute or position of that animal. Such names readily admit of being expressed in sign language, but there may be sometimes a confusion between the sign expressing the animal which is taken as a name-totem, and the sign used, not to designate that animal, but as a proper name. A curious device to differentiate proper names was observed as resorted to by a Brulé Dakota. After making the sign of the animal he passed his index forward from the mouth in a direct line, and explained it orally as "that is his name," *i. e.*, the name of the person referred to. This approach to a grammatic division of substantives may be correlated with the mode in which many tribes, especially the Dakotas, designate names in their pictographs, *i. e.*, by a line from the mouth of the figure drawn representing a man to the animal, also drawn with proper color or position. Fig. 150 thus shows the name of Shu^{n} ka Luta, Red Dog, an Ogallalla chief, drawn by himself. The shading of the dog by vertical lines is designed to represent red, or *gules*, according to the heraldic scheme of colors, which is used in other parts of this paper where it seemed useful to designate particular colors. The writer possesses in painted robes many examples in which lines are drawn from the mouth to a name-totem.

FIG. 150.

It would be interesting to dwell more than is now allowed upon the peculiar objectiveness of Indian proper names with the result, if not the intention, that they can all be signified in gesture, whereas the best sign-talker among deaf-mutes is unable to translate the proper names occurring in his speech or narrative and, necessarily ceasing signs, resorts to the dactylic alphabet. Indians are generally named at first according to a clan or totemic system, but later in life often acquire a new name or perhaps several names in succession from some exploit or adventure. Frequently a sobriquet is given by no means complimentary. All of the subsequently acquired, as well as the original names, are connected with material objects or with substantive actions so as to be expressible in a graphic picture, and, therefore, in a pictorial sign. The determination to use names of this connotive character is shown by the objective translation, whenever possible, of those European names which it became necessary to introduce into their speech. William Penn was called "Onas," that being the word for feather-quill in the Mohawk dialect. The name of the second French governor of Canada was "Montmagny" which was translated by the Iroquois "Onontio"—"Great Mountain," and becoming associated with the title, has been applied to all successive Canadian governors, though the origin being

generally forgotten, it has been considered as a metaphorical compliment. It is also said that Governor Fletcher was not named by the Iroquois "Cajenquiragoe," "the great swift arrow," because of his speedy arrival at a critical time, but because they had somehow been informed of the etymology of his name—"arrow maker" (*Fr. fléchier*).

GENDER.

This is sometimes expressed by different signs to distinguish the sex of animals, when the difference in appearance allows of such varied portraiture. An example is in the signs for the male and female buffalo, given by the Prince of Wied. The former is, "Place the tightly closed hands on both sides of the head, with the fingers forward;" the latter is, "Curve the two forefingers, place them on the sides of the head and move them several times." The short stubby horns of the bull appear to be indicated, and the cow's ears are seen moving, not being covered by the bull's shock mane. Tribes in which the hair of the women is differently arranged from that of men often denote their females by corresponding gesture. In many cases the sex of animals is indicated by the addition of a generic sign for male or female.

TENSE.

While it has been mentioned that there is no inflection of signs to express tense, yet the conception of present, past, and future is gestured without difficulty. A common mode of indicating the present time is by the use of signs for *to-day*, one of which is, "(1) both hands extended, palms outward; (2) swept slowly forward and to each side, to convey the idea of openness." (*Cheyenne* II.) This may combine the idea of *now* with *openness*, the first part of it resembling the general deaf-mute sign for *here* or *now*.

Two signs nearly related together are also reported as expressing the meaning *now*, *at once*, viz.: "Forefinger of the right hand extended, upright, &c. (J), is carried upward in front of the right side of the body and above the head so that the extended finger points toward the center of the heavens, and then carried downward in front of the right breast, forefinger still pointing upright." (*Dakota* I.) "Place the extended index, pointing upward, palm to the left, as high as and before the top of the head; push the hand up and down a slight distance several times, the eyes being directed upward at the time." (*Hidatsa* I; *Kaiowa* I; *Arikara* I; *Comanche* III; *Apache* II; *Wichita* II.)

Time past is not only expressed, but some tribes give a distinct modification to show a short or long time past. The following are examples:

Lately, recently.—Hold the left hand at arm's length, closed, with forefinger only extended and pointing in the direction of the place where the event occurred; then hold the right hand against the right shoulder, closed, but with index extended and pointing in the direction of the left. The hands may be exchanged, the right extended and the left retained,

as the case may require for ease in description. (*Absaroka* I; *Shoshoni and Banak* I.)

Long ago.—Both hands closed, forefingers extended and straight; pass one hand slowly at arm's length, pointing horizontally, the other against the shoulder or near it, pointing in the same direction as the opposite one. Frequently the tips of the forefingers are placed together, and the hands drawn apart, until they reach the positions described. (*Absaroka* I; *Shoshoni and Banak* I.)

The Comanche, Wichita, and other Indians designate a *short time ago* by placing the tips of the forefinger and thumb of the left hand together, the remaining fingers closed, and holding the hand before the body with forefinger and thumb pointing toward the right shoulder; the index and thumb of the right hand are then similarly held and placed against those of the left, when the hands are slowly drawn apart a short distance. For a *long time ago* the hands are similarly held, but drawn farther apart. Either of these signs may be and frequently is preceded by those for *day*, *month*, or *year*, when it is desired to convey a definite idea of the time past.

A sign is reported with the abstract idea of *future*, as follows: "The arms are flexed and hands brought together in front of the body as in type-position (W). The hands are made to move in wave-like motions up and down together and from side to side." (*Oto* I.) The authority gives the poetical conception of "Floating on the tide of time."

The ordinary mode of expressing future time is, however, by some figurative reference, as the following: Count off fingers, then shut all the fingers of both hands several times, and touch the hair and tent or other white object. (*Apache* III.) "Many years; when I am old (white-haired)."

CONJUNCTIONS.

An interesting instance where the rapid connection of signs has the effect of the conjunction *and* is shown in NÁTCI'S NARRATIVE, *infra*.

PREPOSITIONS.

In the TENDOY-HUERITO DIALOGUE (page 489) the combination of gestures supplies the want of the proposition *to*.

PUNCTUATION.

While this is generally accompanied by facial expression, manner of action, or pause, instances have been noticed suggesting the device of interrogation points and periods.

Mark of interrogation.

The Shoshoni, Absaroka, Dakota, Comanche, and other Indians, when desiring to ask a question, precede the gestures constituting the information desired by a sign intended to attract attention and "asking for," viz., by holding the flat right hand, with the palm down, directed to the

individual interrogated, with or without lateral oscillating motion; the gestural sentence, when completed, being closed by the same sign and a look of inquiry. This recalls the Spanish use of the interrogation points before and after the question.

Period.

A Hidatsa, after concluding a short statement, indicated its conclusion by placing the inner edges of the clinched hands together before the breast, and passing them outward and downward to their respective sides in an emphatic manner, Fig. 334, page 528. This sign is also used in other connections to express *done.*

The same mode of indicating the close of a narrative or statement is made by the Wichitas, by holding the extended left hand horizontally before the body, fingers pointing to the right, palm either toward the body or downward, and cutting edgewise downward past the tips of the left with the extended right hand. This is the same sign given in the ADDRESS OF KIN CHÉ-ÉSS as *cut off*, and is illustrated in Fig. 324, page 522. This is more ideographic and convenient than the device of the Abyssinian Galla, reported by M. A. d'Abbadie, who denoted a comma by a slight stroke of a leather whip, a semicolon by a harder one, and a full stop by one still harder.

GESTURES AIDING ARCHÆOLOGIC RESEARCH.

The most interesting light in which the Indians of North America can be regarded is in their present representation of a stage of evolution once passed through by our own ancestors. Their signs, as well as their myths and customs, form a part of the paleontology of humanity to be studied in the history of the latter as the geologist, with similar object, studies all the strata of the physical world. At this time it is only possible to suggest the application of gesture signs to elucidate pictographs, and also their examination to discover religious, sociologic, and historic ideas preserved in them, as has been done with great success in the radicals of oral speech.

SIGNS CONNECTED WITH PICTOGRAPHS.

The picture writing of Indians is the sole form in which they recorded events and ideas that can ever be interpreted without the aid of a traditional key, such as is required for the signification of the wampum belts of the Northeastern tribes and the *quippus* of Peru. Strips of bark, tablets of wood, dressed skins of animals, and the smooth surfaces of rock have been and still are used for such records, those most ancient, and therefore most interesting, being of course the rock etchings; but they can only be deciphered, if at all, by the ascertained principles on which the more modern and the more obvious are made. Many of the numerous and widespread rock carvings are mere idle sketches of natural objects, mainly animals, and others are as exclu-

sively mnemonic as the wampum above mentioned. Even since the Columbian discovery some tribes have employed devices yet ruder than the rudest pictorial attempt as markers for the memory. An account of one of these is given in E. Winslow's Relation (A. D. 1624), *Col. Mass. Hist. Soc.*, 2d series, ix, 1822, p. 99, as follows:

"Instead of records and chronicles they take this course: Where any remarkable act is done, in memory of it, either in the place or by some pathway near adjoining, they make a round hole in the ground about a foot deep, and as much over, which, when others passing by behold, they inquire the cause and occasion of the same, which being once known, they are careful to acquaint all men as occasion serveth therewith. And lest such holes should be filled or grown over by any accident, as men pass by they will often renew the same; by which means many things of great antiquity are fresh in memory. So that as a man traveleth, if he can understand his guide, his journey will be the less tedious, by reason of the many historical discourses which will be related unto him."

Gregg, in *Commerce of the Prairies, New York*, 1844, II, 286, says of the Plains tribes: "When traveling, they will also pile heaps of stones upon mounds or conspicuous points, so arranged as to be understood by their passing comrades; and sometimes they set up the bleached buffalo heads, which are everywhere scattered over those plains, to indicate the direction of their march, and many other facts which may be communicated by those simple signs."

A more ingenious but still arbitrary mode of giving intelligence is practiced at this day by the Abnaki, as reported by H. L. Masta, chief of that tribe, now living at Pierreville, Quebec. When they are in the woods, to say "I am going to the east," a stick is stuck in the ground pointing to that direction, Fig. 151. "Am not gone far," another stick is stuck across the former, close to the ground, Fig. 152. "Gone far" is the reverse, Fig. 153. The number of days journey of proposed absence is shown by the same number of sticks across the first; thus Fig. 154 signifies five days' journey. Cutting the bark off from a tree on one, two, three or four sides near the butt means "Have had poor, poorer, poorest luck." Cutting it off all around the tree means "I am starving." Smoking a piece of birch bark and hanging it on a tree means "I am sick."

FIG. 151.

FIG. 152.

Where there has existed any form of artistic representation, however rude, and at the same time a system of ideographic gesture signs prevailed, it would be expected that the form of the latter would appear in the former. The sign of *river* and *water* mentioned on page 358 being established, when it became necessary or desirable to draw a character or design to convey the same idea, nothing would be more natural than to use the graphic form of delineation which is also above described. It was but one more and an easy step to fasten upon bark, skins, or rocks the evanescent air pictures that still in pigments or carvings preserve their skeleton outline, and in their ideography approach, as has been shown above, the rudiments of the phonetic alphabets that have been constructed by other peoples. A transition stage between gestures and pictographs, in which the left hand is used as a supposed drafting surface upon which the index draws lines, is exhibited in the DIALOGUE BETWEEN ALASKAN INDIANS, *infra*, page 498. This device is common among deaf-mutes, without equal archæologic importance, as it may have been suggested by the art of writing, with which they are generally acquainted, even if not instructed in it.

FIG. 153.

FIG. 154.

The reproduction of apparent gesture lines in the pictographs made by our Indians has, for obvious reasons, been most frequent in the attempt to convey those subjective ideas which were beyond the range of an artistic skill limited to the direct representation of objects, so that the part of the pictographs which is still the most difficult of interpretation is precisely the one which the study of sign language is likely to elucidate. The following examples of pictographs of the Indians, in some cases compared with those from foreign sources, have been selected because their interpretation is definitely known and the gestures corresponding with or suggested by them are well determined.

FIG. 155.

The common Indian gesture sign for *sun* is: "Right hand closed, the index and thumb curved, with tips touching, thus approximating a circle, and held toward the sky," the position of the fingers of the hand forming a circle being shown in Fig. 155. Two of the Egyptian characters for *sun*, Figs. 156 and 157, are plainly the universal conception of the disk. The latter, together with indications of rays, Fig. 158, and in its linear form, Fig. 159, (Champollion, *Dict.*, 9),

FIG. 156.

FIG. 157.

constitutes the Egyptian character for *light*. The rays emanating from the whole disk appear in Figs. 160 and 161, taken from a MS. contributed by Mr. G. K. GILBERT of the United States Geological Survey, from the rock etchings of the Moqui pueblos in Arizona. The same authority gives from the same locality Figs. 162 and 163 for *sun*, which may be distinguished from several other similar etchings for *star* also given by him, Figs. 164, 165, 166, 167, by always showing some indication of a face, the latter being absent in the characters denoting *star*.

FIG. 158.

FIG. 159.

FIG. 160.

FIG. 161.

With the above characters for sun compare Fig. 168, found at Cuzco, Peru, and taken from Wiener's *Pérou et Bolivie, Paris*, 1880, p. 706.

The Ojibwa pictograph for sun is seen in Fig. 169, taken from Schoolcraft, *loc. cit.*, v. 1, pl. 56, Fig. 67.

FIG. 162.

FIG. 163.

A gesture sign for *sunrise*, *morning*, is: Forefinger of right hand crooked to represent half of the sun's disk and pointed or extended to the left, then slightly elevated. (*Cheyenne* II.) In this connection it may be noted that when the gesture is carefully made in open country the pointing would generally be to the east, and the body turned so that its left would be in that direction. In a room in a city, or under circumstances where the points of the compass are not specially attended to, the left side supposes the east, and the gestures relating to sun, day, &c., are made with such reference. The half only of the disk represented in the above gesture appears in the following Moqui pueblo etchings for *morning* and *sunrise*, Figs. 170, 171, and 172. (Gilbert, *MS.*)

FIG. 164.

FIG. 165.

FIG. 166.

FIG. 167.

FIG. 169.

FIG. 168.

A common gesture for *day* is when the index and thumb form a circle (remaining fingers closed) and are passed from east to west.

Fig. 173 shows a pictograph found in Owen's Valley, California, a similar one being reported in the *Ann. Rep. Geog. Survey west of the 100th Meridian for* 1876, *Washington*, 1876, pl. opp. p. 326, in which the circle may indicate either *day* or *month* (both these gestures having the same execution), the course of the sun or moon being represented perhaps in mere contradistinction to the vertical line, or perhaps the latter signifies *one*.

FIG. 170.

FIG. 171.

FIG. 172.

FIG. 173.

Fig. 174 is a pictograph of the Coyotero Apaches, found at Camp Apache, in Arizona, reported in the *Tenth Ann. Rep. U. S. Geolog. and Geograph. Survey of the Territories for* 1876, *Washington*, 1878, pl. lxxvii. The sun and the ten spots of approximately the same shape represent the days, eleven, which the party with five pack mules passed in traveling through the country. The separating lines are the nights, and may include the conception of covering over and consequent ob scurity above referred to (page 354).

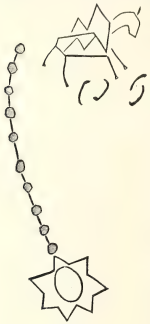

Fig. 174.

Fig. 175.

A common sign for *moon, month*, is the right hand closed, leaving the thumb and index extended, but curved to form a half circle and the hand held toward the sky, in a position which is illustrated in Fig. 175, to which curve the Moqui etching, Fig. 176, and the identical form in the ancient Chinese has an obvious resemblance.

The crescent, as we commonly figure the satellite, appears also in the Ojibwa pictograph, Fig. 177 (Schoolcraft, I, pl. 58), which is the same, with a slight addition, as the Egyptian figurative character.

Fig. 176.

Fig. 177.

The sign for *sky*, also *heaven*, is generally made by passing the index from east to west across the zenith. This curve is apparent in the Ojibwa pictograph Fig. 178, reported in Schoolcraft, I, pl. 18, Fig. 21, and is abbreviated in the Egyptian character with the same meaning, Fig. 179 (Champollion, *Dict.*, p. 1).

Fig. 178.

Fig. 179.

A sign for *cloud* is as follows: (1) Both hands partially closed, palms facing and near each other, brought up to level with or slightly above, but in front of the head; (2) suddenly separated sidewise, describing a curve like a scallop; this scallop motion is repeated for "many clouds." (*Cheyenne* II.) The same conception is in the Moqui etchings, Figs. 180, 181, and 182 (Gilbert *MS.*)

Fig. 180.

Fig. 181.

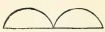

Fig. 182.

The Ojibwa pictograph for *cloud* is more elaborate, Fig. 183, reported in Schoolcraft, I, pl. 58. It is composed of the sign for *sky*, to which that for *clouds* is added, the latter being reversed as compared with the Moqui etchings, and picturesquely hanging from the sky.

Fig. 183.

The gesture sign for *rain* is described and illustrated on page 344. The pictograph, Fig. 184, reported as found in New Mexico by

Lieutenant Simpson (*Ex. Doc. No.* 64, *Thirty-first Congress, first session*, 1850, pl. 9) is said to represent Montezuma's adjutants sounding a blast to him for rain. The small character inside the curve which represents the sky, corresponds with the gesturing hand. The Moqui etching (Gilbert *MS.*) for *rain, i. e.*, a cloud from which the drops are falling, is given in Fig. 185.

Fig. 185.

Fig. 184.

Fig. 186.

The same authority gives two signs for *lightning*, Figs. 186 and 187. In the latter the sky is shown, the changing direction of the streak, and clouds with rain falling. The part relating specially to the streak is portrayed in a sign as follows: Right hand elevated before and above the head, forefinger pointing upward, brought down with great rapidity with a sinuous, undulating motion; finger still extended diagonally downward toward the right. (*Cheyenne* II.)

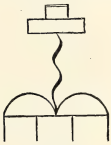

Fig. 187.

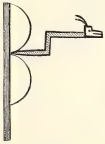

Fig. 188.

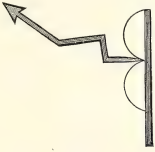

Fig. 189.

Figs. 188 and 189 also represent *lightning*, taken by Mr. W. H. Jackson, photographer of the late U. S. Geolog. and Geog. Survey, from the decorated walls of an estufa in the Pueblo de Jemez, New Mexico. The former is blunt, for harmless, and the latter terminating in an arrow or spear point, for destructive or fatal, lightning.

Fig. 190.

A common sign for *speech, speak*, among the Indians is the repeated motion of the index in a straight line forward from the mouth. This line, indicating the voice, is shown in Fig. 190, taken from the *Dakota Calendar*, being the expression for the fact that "the-Elk-that-hollows walking," a Minneconjou chief, "made med-

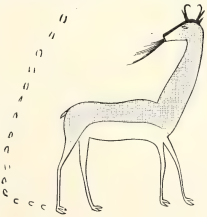

Fig. 191.

icine." The ceremony is indicated by the head of an albino buffalo. A more graphic portraiture of the conception of *voice* is in Fig. 191, representing an antelope and the whistling sound produced by the animal on being surprised or alarmed. This is taken from MS. drawing book of an Indian prisoner at Saint Augustine, Fla., now in the Smithsonian Institution, No. 30664.

FIG. 192.

Fig. 192 is the exhibition of wrestling for a turkey, the point of interest in the present connection being the lines from the mouth to the objects of conversation. It is taken from the above-mentioned MS. drawing book.

The wrestlers, according to the foot prints, had evidently come together, when, meeting the returning hunter, who is wrapped in his blanket with only one foot protruding, they separated and threw off their blankets, leggings, and moccasins, both endeavoring to win the turkey, which lies between them and the donor.

In Fig. 193, taken from the same MS. drawing book, the conversation is about the lassoing, shooting, and final killing of a buffalo which has wandered to a camp. The dotted lines indicate footprints. The Indian drawn under the buffalo having secured the animal by the fore feet, so informs his companions, as indicated by the line drawn from his mouth to the object mentioned; the left-hand figure, having also secured the buffalo by the horns, gives his nearest comrade an opportunity to strike it with an ax, which he no

doubt announces that he will do, as the line from his mouth to the head of the animal suggests. The Indian in the upper left-hand corner is told by a squaw to take an arrow and join his companions, when he turns his head to inform her that he has one already, which fact he demonstrates by holding up the weapon.

FIG. 193.

The Mexican pictograph, Fig. 194, taken from Kingsborough, II, pt. 1, p. 100, is illustrative of the sign made by the Arikara and Hidatsa for *tell* and *conversation*. *Tell me* is: Place the flat right hand, palm upward, about fifteen inches in front of the right side of the face, fingers pointing to the left and front; then draw the hand inward toward and against the bottom of the chin. For *conversation*, talking between two persons, both hands are held before the breast, pointing forward, palms up, the edges being moved several times toward one another. Perhaps, however, the picture in fact only means the common poetical image of "flying words."

Fig. 195 is one of Landa's characters, found in *Rel. des choses de Yucatan*, p. 316, and suggests one of the gestures for *talk* and more especially that for *sing*, in which the extended and separated fingers are passed forward and slightly downward from the mouth—"many voices." Although the last opinion about the bishop is unfavorable to the authenticity of his work, yet even if it were prepared by a Maya, under his supervision, the latter would probably have given him some genuine native conceptions, and among them gestures would be likely to occur.

Fig. 194.

The natural sign for *hear*, made both by Indians and deaf-mutes, consisting in the motion of the index, or the index and thumb joined, in a straight line to the ear, is illustrated in the Ojibwa pictograph Fig. 196, "hearing ears," and those of the same people, Figs. 197 and 198, the latter of which is a hearing serpent, and the former means "I hear, but your words are from a bad heart," the hands being thrown out as in the final part of a gesture for *bad heart*, which is made by the hand being closed and held near the breast, with the back toward the breast, then as the arm is suddenly extended the hand is opened and the fingers separated from each other. (*Mandan and Hidatsa* I.) The final part of the gesture, representing the idea of *bad*, not connected with heart, is illustrated in Fig. 236 on page 411.

Fig. 195.

Fig. 196.

Fig. 197.

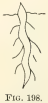

Fig. 198.

The above Ojibwa pictographs are taken from Schoolcraft, *loc. cit.* I, plates 58, 53, 59.

Fig. 199, a bas-relief taken from Dupaix's Monuments of New Spain,

in Kingsborough, *loc. cit.* IV, pt. 3, p. 31, has been considered to be a royal edict or command. The gesture *to hear* is plainly depicted, and the

Fig. 199.

right hand is directed to the persons addressed, so the command appears to be uttered with the preface of *Hear Ye! Oyez!*

Fig. 201.

The typical sign for *kill* or *killed* is: Right hand clinched, thumb lying along finger tips, elevated to near the shoulder, strike downward and outward vaguely in the direction of the object to be killed. The abbreviated sign is simply to clinch the right hand in the manner described and strike it down and out from the right side. (*Cheyenne* II.) This gesture also appears among the Dakotas and is illustrated in Fig. 200.

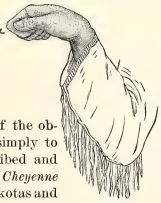

Fig. 200.

Fig. 201, taken from the *Dakota Calendar*, illustrates this gesture. It

represents the year in which a Minneconjou chief was stabbed in the shoulder by a Gros Ventre, and afterwards named "Dead Arm" or "Killed Arm." At first the figure was supposed to show the permanent drawing up of the arm by anchylosis, but that would not be likely to be the result of the wound described, and with knowledge of the gesture the meaning is more clear.

Fig. 202, taken from *Report upon the Reconnaissance of Northwestern*

FIG. 202.

Wyoming, &c., Washington, 1875, p. 207, Fig. 53, found in the Wind River Valley, Wyoming Territory, was interpreted by members of a Shoshoni and Banak delegation to Washington in 1880 as "an Indian killed another." The latter is very roughly delineated in the horizontal figure, but is also represented by the line under the hand of the upright figure, meaning the same individual. At the right is the scalp taken and the two feathers showing the dead warrior's rank. The arm nearest the prostrate foe shows the gesture for *killed*.

The same gesture appears in Fig. 203, from the same authority and locality. The scalp is here held forth, and the numeral *one* is designated by the stroke at the bottom.

FIG. 203.

Fig. 204, from the same locality and authority, was also interpreted by the Shoshoni and Banak. It appears from their description that a Blackfoot had attacked the habitation of some of his own people. The right-hand upper figure represents his horse with the lance suspended from the side. The lower figure illustrates the log house built against a stream. The dots are the prints of the horse's hoofs, while the two lines running outward from the upper inclosure show that two thrusts of the lance were made over the wall of the house, thus killing the occupant and securing two bows and five arrows, as represented in the left-hand group. The right-hand figure of that group shows the hand raised in the attitude of making the gesture for *kill*.

As the Blackfeet, according to the interpreters, were the only Indians in the locality mentioned who constructed log houses, the drawing becomes additionally interesting, as an attempt appears to have been made to illustrate the crossing of the logs at the corners, the gesture for which (*log-house*) will be found on page 428.

Fig. 205 is the Egyptian character for *veneration, to glorify* (Champollion, *Dict.*, 29), the author's understanding being that the hands are raised in surprise, astonishment.

The Menomoni Indians now begin their prayers by raising their hands in the same manner. They may have been influenced in this respect by the attitudes of their missionaries in prayer and benediction. The Apaches, who have received less civilized tuition, in a religious gesture corresponding with prayer spread their hands opposite the face, palms up and backward, apparently expressing the desire to *receive*.

Fig. 206

Fig. 206 is a copy of an Egyptian tablet reproduced from Cooper's *Serpent Myths*, page 28. A priest kneels before the great goddess Ranno, while supplicating her favor. The conception of the author is that the hands are raised by the supplicant to shield his face from the glory of the divinity. It may be compared with signs for asking for *mercy* and for giving mercy to another, the former being: Extend both forefingers, pointing upward, palms toward the breast, and hold the hands before the chest; then draw them inward toward their respective sides, and pass them upward as high as the sides of the head by either cheek.

(*Kaiowa* I; *Comanche* III; *Apache* II; *Wichita* II.) The latter, *to have mercy on another*, as made by the same tribes, is: Hold both hands nearly side by side before the chest, palms forward, forefinger only extended and pointing upward; then move them forward and upward, as if passing them by the cheeks of another person from the breast to the sides of the head.

Fig. 205.

Fig. 206.

A similar gesture for *supplication* appears in Fig. 207, taken from Kingsborough, *loc. cit.*, III, pt. I, p. 24.

An Indian gesture sign for *smoke*, and also one for *fire*, has been described above, page 344. With the former is connected the Aztec design (Fig. 208) taken from Pipart, *loc. cit.*, II, 352, and the latter appears in Fig. 209, taken from Kingsborough, III, pt. I, p. 21.

A sign for *medicine-man*, *shaman*, is thus described: "With its index-finger extended and pointing upward, or all the fingers extended, back of hand outward, move the right hand from just in front of the forehead, spirally upward, nearly to arm's length, from left to right." (*Dakota* IV.)

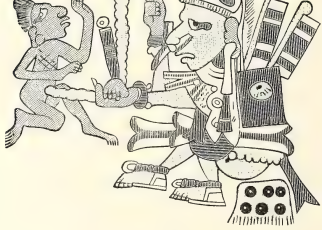

Fig. 207.

Fig. 210, from the *Dakota Calendar*, represents the making of medicine or conjuration. In that case the head and horns of a white buffalo cow were used.

Fig. 211 is an Ojibwa pictograph taken from Schoolcraft, *loc. cit.*, representing *medicine-man*, *meda*. With these horns and spiral may be collated Fig. 212 which portrays the ram-headed Egyptian god Knuphis, or Chnum, the spirit, in a shrine on the boat of the sun, canopied by the serpent-goddess Ranno, who is also seen facing him inside the shrine. This is reproduced from Cooper's *Serpent Myths*, p. 24. The same deity is represented in Champollion, *Gram.*, p. 113, as reproduced in Fig. 213.

Fig. 208.

Fig. 214 is an Ojibwa pictograph found in Schoolcraft, I, pl. 58, and given as *power*. It corresponds with the sign for *doctor*, or *medicine-man*, made by the Absarokas by passing the extended and separated index

and second finger of the right hand upward from the forehead, spirally, and is considered to indicate "superior knowledge." Among the Otos, as part of the sign with the same meaning, both hands are raised to the side of the head, and the extended indices pressing the temples.

Fig. 210.

Fig. 209.

Fig. 215 is also an Ojibwa pictograph from Schoolcraft I, pl. 59, and is said to signify *Meda's power*. It corresponds with another sign made for *medicine-man* by the Absarokas and Comanches, viz, The hand passed upward before the forehead, with index loosely extended. Combined with the sign for *sky*, before given, page 372, it means knowledge of superior matters; spiritual power.

Fig. 211.

The common sign for *trade* is made by extending the forefingers, holding them obliquely upward, and crossing them at right angles to one another, usually in front of the chest. This is often abbreviated by merely crossing the forefingers, see Fig. 278, page 452.

Fig. 212.

It is illustrated in Fig. 216, taken from the Prince of Wied's *Travels in the Interior of North America; London*, 1843, p. 352.

Fig. 213.

To this the following explanation is given: "The cross signifies, 'I will barter or trade.' Three animals are drawn on the right hand of the cross; one is a buffalo; the two others, a weasel (*Mustela Canadensis*) and an otter. The writer offers in exchange for the skins of these animals (probably meaning that of a white buffalo) the articles which he has drawn on the left side of the cross. He has, in the first place, depicted a beaver very plainly, behind which there is a gun; to the left of the beaver are thirty strokes, each ten

Fig. 214.

Fig. 215.

separated by a longer line; this means, I will give thirty beaver skins and a gun for the skins of the three animals on the right hand of the cross."

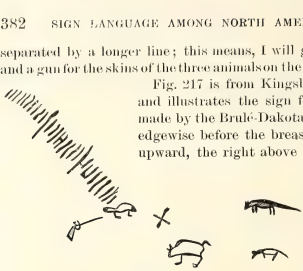

Fig. 216.

Fig. 217 is from Kingsborough, III, pt. 1, p. 25, and illustrates the sign for *to give* or *to present*, made by the Brulé-Dakotas by holding both hands edgewise before the breast, pointing forward and upward, the right above the left, then throwing them quickly downward until the forearms reach a horizontal position.

Fig. 218 is taken from the *Dakota Calendar*, representing a successful raid of the Absarokas or Crows upon the Brulé-Sioux, in which the village of the latter was surprised and a large number of horses captured. That capture is exhibited by the horse-tracks moving from the *village*, the gesture sign for which is often made by a circle formed either by the opposed thumbs and forefingers of both hands or by a circular motion of both hands, palms inward, toward each other. In some cases there is a motion of the circle, from above downward, as formed.

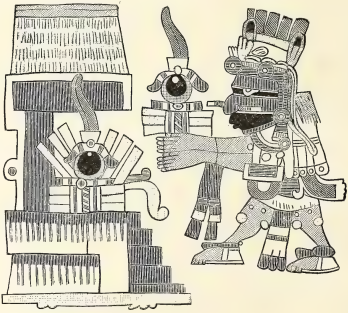

Fig. 217.

Fig. 219, from Kingsborough I, pt. 3, p. 10, represents *Chapultepec*, "Mountain of the Locust," by one enormous locust on top of a hill. This shows the mode of augmentation in the same manner as is often done by an exaggerated gesture. The curves at the base of the mountain are intelligible only as being formed in the sign for *many*, described on pages 359 and 488.

Fig. 218.

Fig. 220, taken from Pipart, *loc. cit.*, is the Mexican pictograph for *soil cultivated*, *i. e.*, tilled and planted. Fig. 221, from the same authority,

shows the sprouts coming from the cultivated soil, and may be compared with the signs for *grass* and *grow* on page 343.

The gesture sign for *road*, *path*, is sometimes made by indicating two lines forward from the body, then imitating walking with the hands upon the imaginary road. The same natural representation of road is seen in Fig. 222, taken from Pipart, *loc. cit.*, page 352. A place where two roads meet—cross-roads—is shown in Fig. 223, from Kingsborough. Two persons are evidently having a chat in sign language at the cross-roads.

Fig. 219.

Fig. 220.

If no gesture is actually included in all of the foregoing pictographs, it is seen that a gesture sign is made with the same conception which is obvious in the ideographic pictures. They are selected as specially transparent and clear. Many others less distinct are now the subject of examination for elucidation. The following examples are added to show the ideographic style of pictographs not connected with gestures, lest it may be suspected that an attempt is made to prove that gestures are always included in or connected with them. Fig. 224, from the *Dakota Calendar*, refers to the small-pox which broke out in the year (1802) which it specifies. Fig. 225 shows in the design at the left, a warning or notice, that though a goat can climb up the rocky trail a horse will tumble—"No Thoroughfare." This was contributed

Fig. 221.

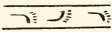

Fig. 222.

Fig. 223.

Fig. 224.

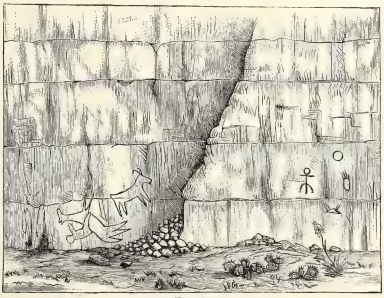

Fig. 225.

by Mr. J. K. Hillers, photographer of the United States Geological Survey, as observed by him in Cañon De Chelly, New Mexico, in 1880.

SIGNS CONNECTED WITH ETHNOLOGIC FACTS.

The present limits permit only a few examples of the manner in which the signs of Indians refer to sociologic, religious, historic, and other ethnologic facts. They may incite research to elicit further information of the same character.

The Prince of Wied gives in his list of signs the heading *Partisan*, a term of the Canadian voyageurs, signifying a leader of an occasional or volunteer war party, the sign being reported as follows: Make first the sign of the pipe, afterwards open the thumb and index-finger of the right hand, back of the hand outward, and move it forward and upward in a curve. This is explained by the author's account in a different connection, that to become recognized as a leader of such a war party as above mentioned, the first act among the tribes using the sign was the consecration, by fasting succeeded by feasting, of a medicine pipe without ornament, which the leader of the expedition afterward bore before him as his badge of authority, and it therefore naturally became an emblematic sign. This sign with its interpretation supplies a meaning to Fig. 226 from the *Dakota Calendar* showing "One Feather," a Sioux chief who raised in that year a large war party against the Crows, which fact is simply denoted by his holding out demonstratively an unornamented pipe. In connection with this subject, Fig. 227, drawn and explained by Two Strike, an Ogalala Dakota, relating to his own achievements, displays four plain pipes to exhibit the fact that he had led four war parties.

Fig. 226.

Fig. 227.

The sign of the pipe or of smoking is made in a different manner, when used to mean *friend*, as follows: (1) Tips of the two first fingers of the right hand placed against or at right angles to the mouth; (2) suddenly elevated upward and outward to imitate smoke expelled. (*Cheyenne* II). "We two smoke together." This is illustrated in the Ojibwa pictograph, Fig. 228, taken from Schoolcraft I, pl. 59.

Fig. 228.

A ceremonial sign for *peace, friendship*, is the extended fingers, separated (R), interlocked in front of the breast, hands horizontal, backs outward. (*Dakota* I.) Fig. 229 from the *Dakota Calendar* exhibits the beginning of this gesture. When the idea conveyed

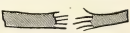

Fig. 229.

is peace or friendship with the whites, the hand shaking of the latter is adopted as in Fig. 230, also taken from the *Dakota Calendar*, and referring to the peace made in 1855 by General Harney, at Fort Pierre, with a number of the tribes of the Dakotas.

FIG. 230.

It is noticeable that while the ceremonial gesture of uniting or linking hands is common and ancient in token of peace, the practice of shaking hands on meeting, now the annoying etiquette of the Indians in their intercourse with whites, was not until very recently and is even now seldom used by them between each other, and is clearly a foreign importation. Their fancy for affectionate greeting was in giving a pleasant bodily sensation by rubbing each other on the breast, abdomen, and limbs, or by a hug. The senseless and inconvenient custom of shaking hands is, indeed, by no means general throughout the world, and in the extent to which it prevails in the United States is a subject of ridicule by foreigners. The Chinese, with a higher conception of politeness, shake their own hands. The account of a recent observer of the meeting of two polite Celestials is: "Each placed the fingers of one hand over the fist of the other, so that the thumbs met, and then standing a few feet apart raised his hands gently up and down in front of his breast. For special courtesy, after the foregoing gesture, they place the hand which had been the actor in it on the stomach of its owner, not on that part of the interlocutor, the whole proceeding being subjective, but perhaps a relic of objective performance." In Miss Bird's *Unbeaten Tracks in Japan*, *London*, 1880, the following is given as the salutatory etiquette of that empire: "As acquaintances come in sight of each other they slacken their pace and approach with downcast eyes and averted faces as if neither were worthy of beholding each other; then they bow low, so low as to bring the face, still kept carefully averted, on a level with the knees, on which the palms of the hands are pressed. Afterwards, during the friendly strife of each to give the *pas* to the other, the palms of the hands are diligently rubbed against each other."

The interlocking of the fingers of both hands above given as an Indian sign (other instances being mentioned under the head of SIGNALS, *infra*) is also reported by R. Brough Smyth, *Aborigines of Victoria*, *loc. cit.*, Vol. II, p. 308, as made by the natives of Cooper's Creek, Australia, to express the highest degree of friendship, including a special form of hospitality in which the wives of the entertainer performed a part. Fig. 231 is reproduced from a cut in the work referred to.

FIG. 231.

But besides this interlocked form of signifying the union of friendship the hands are frequently grasped together. Sometimes the sign is abbreviated by simply extending the hand as if about to grasp that of another, and sometimes the two forefingers are laid side by side, which last sign also means, *same*, *brother* and *companion*. For description and

illustration of these three signs, see respectively pages 521, 527, and 317. A different execution of the same conception of union or linking to signify *friend* is often made as follows: Hook the curved index over the curved forefinger of the left hand, the palm of the latter pointing forward, the palm of the right hand being turned toward the face; remaining fingers and thumbs being closed. (*Dakota* VIII.) Fig. 232.

FIG. 232.

Wied's sign for *medicine* is "Stir with the right hand into the left, and afterward blow into the latter." All persons familiar with the Indians will understand that the term "medicine," foolishly enough adopted by both French and English to express the aboriginal magic arts, has no therapeutic significance. Very few even pretended remedies were administered to the natives and probably never by the professional shaman, who worked by incantation, often pulverizing and mixing the substances mystically used, to prevent their detection. The same mixtures were employed in divination. The author particularly mentions Mandan ceremonies, in which a white "medicine" stone, as hard as pyrites, was produced by rubbing in the hand snow or the white feathers of a bird. The blowing away of the disease, considered to be introduced by a supernatural power foreign to the body, was a common part of the juggling performance.

A sign for *stone* is as follows: With the back of the arched right hand (H) strike repeatedly in the palm of the left, held horizontal, back outward, at the height of the breast and about a foot in front; the ends of the fingers point in opposite directions. (*Dakota* I.) From its use when the stone was the only hammer.

A suggestive sign for *knife* is reported, viz: Cut past the mouth with the raised right hand. (*Wied.*) This probably refers to the general practice of cutting off food, as much being crammed into the mouth as can be managed and then separated from the remaining mass by a stroke of a knife. This is specially the usage with fat and entrails, the Indian delicacies.

An old sign for *tomahawk*, *ax*, is as follows: Cross the arms and slide the edge of the right hand, held vertically, down over the left arm. (*Wied.*) This is still employed, at least for a small hatchet, or "dress tomahawk," and would be unintelligible without special knowledge. The essential point is laying the extended right hand in the bend of the left elbow. The sliding down over the left arm is an almost unavoidable but quite unnecessary accompaniment to the sign, which indicates the way in which the hatchet is usually carried. Pipes, whips, bows and arrows, fans, and other dress or emblematic articles of the "buck" are seldom or never carried in the bend of the left elbow as is the ax. The pipe is usually held in the left hand.

The following sign for *Indian village* is given by Wied: Place the open thumb and forefinger of each hand opposite to each other, as if to

make a circle, but leaving between them a small interval; afterward move them from above downward simultaneously. The villages of the tribes with which the author was longest resident, particularly the Mandans and Arikaras, were surrounded by a strong circular stockade, spaces or breaks in the circle being left for entrance or exit.

Signs for *dog* are made by some of the tribes of the plains essentially the same as the following: Extend and spread the right, fore, and middle fingers, and draw the hand about eighteen inches from left to right across the front of the body at the height of the navel, palm downward, fingers pointing toward the left and a little downward, little and ring fingers to be loosely closed, the thumb against the ring-finger. (*Dakota* IV.) The sign would not be intelligible without knowledge of the fact that before the introduction of the horse, and even yet, the dog has been used to draw the tent- or lodge-poles in moving camp, and the sign represents the trail. Indians less nomadic, who built more substantial lodges, and to whom the material for poles was less precious than on the plains, would not have comprehended this sign without such explanation as is equivalent to a translation from a foreign language, and the more general one is the palm lowered as if to stroke gently in a line conforming to the animal's head and neck. It is abbreviated by simply lowering the hand to the usual height of the wolfish aboriginal breed, and suggests *the* animal *par excellence* domesticated by the Indians and made a companion.

Several examples connected with this heading may be noticed under the preceding head of gestures connected with pictographs, and others of historic interest will be found among the TRIBAL SIGNS, *infra*.

NOTABLE POINTS FOR FURTHER RESEARCHES.

It is considered desirable to indicate some points to which for special reasons the attention of collaborators for the future publication on the general subject of sign language may be invited. These now follow:

INVENTION OF NEW SIGNS.

It is probable that signs will often be invented by individual Indians who may be pressed for them by collectors to express certain ideas, which signs of course form no part of any current language; but while that fact should, if possible, be ascertained and reported, the signs so invented are not valueless merely because they are original and not traditional, if they are made in good faith and in accordance with the principles of sign formation. Less error will arise in this direction than from the misinterpretation of the idea intended to be conveyed by spontaneous signs. The process resembles the coining of new words to which the higher languages owe their copiousness. It is observed in the signs

invented by Indians for each new product of civilization brought to their notice.

An interesting instance is in the sign for *steamboat*, made at the request of the writer by White Man (who, however, did not like that sobriquet and announced his intention to change his name to Lean Bear), an Apache, in June, 1880, who had a few days before seen a steamboat for the first time. After thinking a moment he gave an original sign, described as follows:

Make the sign for *water*, by placing the flat right hand before the face, pointing upward and forward, the back forward, with the wrist as high as the nose; then draw it down and inward toward the chin; then with both hands indicate the outlines of a horizontal oval figure from before the body back to near the chest (being the outline of the deck); then place both flat hands, pointing forward, thumbs higher than the outer edges, and push them forward to arms'-length (illustrating the powerful forward motion of the vessel).

An original sign for *telegraph* is given in NATCI'S NARRATIVE, *infra*.

An Indian skilled in signs, as also a deaf-mute, at the sight of a new object, or at the first experience of some new feeling or mental relation, will devise some mode of expressing it in pantomimic gesture or by a combination of previously understood signs, which will be intelligible to others, similarly skilled, provided that they have seen the same objects or have felt the same emotions. But if a number of such Indians or deaf-mutes were to see an object—for instance an elephant—for the first time, each would perhaps hit upon a different sign, in accordance with the characteristic appearance most striking to him. That animal's trunk is generally the most attractive lineament to deaf-mutes, who make a sign by pointing to the nose and moving the arm as the trunk is moved. Others regard the long tusks as the most significant feature, while others are struck by the large head and small eyes. This diversity of conception brings to mind the poem of "The Blind Men and the Elephant," which with true philosophy in an amusing guise explains how the sense of touch led the "six men of Indostan" severally to liken the animal to a wall, spear, snake, tree, fan, and rope. A consideration of invented or original signs, as showing the operation of the mind of an Indian or other uncivilized gesturer, has a psychologic interest, and as connected with the vocal expression, often also invented at the same time, has further value.

DANGER OF SYMBOLIC INTERPRETATION.

In the examination of sign language it is important to form a clear distinction between signs proper and symbols. The terms signs and symbols are often used interchangeably, but with liability to misconstruction, as many persons, whether with right or wrong lexical definition, ascribe to symbols an occult and mystic signification. All characters in Indian picture-writing have been loosely styled symbols, and, as there is no logical distinction between the characters impressed with

enduring form and when merely outlined in the ambient air, all Indian gestures, motions, and attitudes might with equal appropriateness be called symbolic. While, however, all symbols come under the generic head of signs, very few signs are in accurate classification symbols. S. T. Coleridge has defined a symbol to be a sign included in the idea it represents. This may be intelligible if it is intended that an ordinary sign is extraneous to the concept and, rather than suggested by it, is invented to express it by some representation or analogy, while a symbol may be evolved by a process of thought from the concept itself; but it is no very exhaustive or practically useful distinction. Symbols are less obvious and more artificial than mere signs, require convention, are not only abstract, but metaphysical, and often need explanation from history, religion, and customs. They do not depict but suggest subjects; do not speak directly through the eye to the intelligence, but presuppose in the mind knowledge of an event or fact which the sign recalls. The symbols of the ark, dove, olive branch, and rainbow would be wholly meaningless to people unfamiliar with the Mosaic or some similar cosmology, as would be the cross and the crescent to those ignorant of history. The last named objects appeared in the class of *emblems* when used in designating the conflicting powers of Christendom and Islamism. Emblems do not necessarily require any analogy between the objects representing, and the objects or qualities represented, but may arise from pure accident. After a scurrilous jest the beggar's wallet became the emblem of the confederated nobles, the Gueux of the Netherlands; and a sling, in the early minority of Louis XIV, was adopted from the refrain of a song by the Frondeur opponents of Mazarin. The portraiture of a fish, used, especially by the early Christians, for the name and title of Jesus Christ was still more accidental, being, in the Greek word ἰχθύς, an acrostic composed of the initials of the several Greek words signifying that name and title. This origin being unknown to persons whose religious enthusiasm was as usual in direct proportion to their ignorance, they expended much rhetoric to prove that there was some true symbolic relation between an actual fish and the Saviour of men. Apart from this misapplication, the fish undoubtedly became an emblem of Christ and of Christianity, appearing frequently on the Roman catacombs and at one time it was used hermeneutically.

The several tribal signs for the Sioux, Arapahos, Cheyennes, &c., are their emblems precisely as the star-spangled flag is that of the United States, but there is nothing symbolic in any of them. So the signs for individual chiefs, when not merely translations of their names, are emblematic of their family totems or personal distinctions, and are no more symbols than are the distinctive shoulder-straps of army officers. The *crux ansata* and the circle formed by a snake biting its tail are symbols, but *consensus* as well as invention was necessary for their establishment, and the Indians have produced nothing so esoteric, nothing which they intended for hermeneutic as distinct from descriptive or mnemonic pur-

poses. Sign language can undoubtedly be and is employed to express highly metaphysical ideas, but to do that in a symbolic system requires a development of the mode of expression consequent upon a similar development of the mental idiocrasy of the gesturers far beyond any yet found among historic tribes north of Mexico. A very few of their signs may at first appear to be symbolic, yet even those on closer examination will probably be relegated to the class of emblems.

The point urged is that while many signs can be used as emblems and both can be converted by convention into symbols or be explained as such by perverted ingenuity, it is futile to seek for that form of psychologic exuberance in the stage of development attained by the tribes now under consideration. All predetermination to interpret either their signs or their pictographs on the principles of symbolism as understood or pretended to be understood by its admirers, and as are sometimes properly applied to Egyptian hieroglyphs, results in mooning mysticism. This was shown by a correspondent who enthusiastically lauded the *Dakota Calendar* (edited by the present writer, and which is a mere figuration of successive occurrences in the history of the people), as a numerical exposition of the great doctrines of the Sun religion in the equations of time, and proved to his own satisfaction that our Indians preserved hermeneutically the lost geometric cultus of pre-Cushite scientists.

Another exhibition of this vicious practice was recently made in the interpretation of an inscribed stone alleged to have been unearthed near Zanesville, Ohio. Two of the characters were supposed, in liberal exercise of the imagination, to represent the *A* and *Ω* of the Greek alphabet. At the comparatively late date when the arbitrary arrangement of the letters of that alphabet had become fixed, the initial and concluding letters might readily have been used to represent respectively the beginning and the end of any series or number of things, and this figure of speech was employed in the book of Revelations. In the attempted interpretation of the inscription mentioned, which was hawked about to many scientific bodies, and published over the whole country, the supposed alpha and omega were assumed to constitute a universal as well as sacred symbol for the everlasting Creator. The usual *menu* of Roman feasts, commencing with eggs and ending with apples, was also commonly known at the time when the book of Revelations was written, and the phrase "*ab ovo usque ad mala*" was as appropriate as "from alpha to omega" to express "from the beginning to the end." In deciphering the stone it would, therefore, be as correct in principle to take one of its oval and one of its round figures, call them egg and apple, and make them the symbols of eternity. In fact, not depending wholly for significance upon the order of courses of a feast or the accident of alphabetical position, but having intrinsic characteristics in reference to the origin and fruition of life, the egg and apple translation would be more acceptable to the general judgment, and it is recommended to enthusiasts who insist on finding symbols where none exist.

SIGNS USED BY WOMEN AND CHILDREN.

For reasons before given it is important to ascertain the varying extent of familiarity with sign language among the members of the several tribes, how large a proportion possesses any skill in it, and the average amount of their vocabulary. It is also of special interest to learn the degree to which women become proficient, and the age at which children commence its practice; also whether they receive systematic instruction in it. The statement was made by Titchkemátski that the Kaiowa and Comanche women know nothing of sign language, while the Cheyenne women are versed in it. As he is a Cheyenne, however, he may not have a large circle of feminine acquaintances beyond his own tribe, and his negative testimony is not valuable. Rev. A. J. Holt, from large experience, asserts that the Kaiowa and Comanche women do know and practice sign language, though the Cheyenne either are more familiar with it than the Kaiowa or have a greater degree of expertness. The Comanche women, he says, are the peers of any sign-talkers. Colonel Dodge makes the broad assertion that even among the Plains tribes only the old, or at least middle-aged, men use signs properly, and that he has not seen any women or even young men who were at all reliable in signs. He gives this statement to show the difficulty in acquiring sign language; but it is questionable if the fact is not simply the result of the rapid disuse of signs, in many tribes, by which cause women, not so frequently called upon to employ them, and the younger generation, who have had no necessity to learn them, do not become expert. Disappearing Mist, as before mentioned, remembers a time when the Iroquois women and children used signs more than the men.

It is also asserted, with some evidence, that the signs used by males and females are different, though mutually understood, and some minor points for observation may be indicated, such as whether the commencement of counting upon the fingers is upon those of the right or the left hand, and whether Indians take pains to look toward the south when suggesting the course of the sun, which would give the motion from left to right.

A suggestion has been made by a correspondent that some secret signs of affiliation are known and used by the members of the several associations, religious and totemic, which have been often noticed among several Indian tribes. No evidence of this has been received, but the point is worth attention.

POSITIVE SIGNS RENDERED NEGATIVE.

In many cases positive signs to convey some particular idea are not reported, and in their place a sign with the opposite signification is given, coupled with the sign of negation. In other words, the only mode of expressing the intended meaning is supposed to be by negation of the reverse of what it is desired to describe. In this manner "fool—no,"

would be "wise," and "good—no," would be "bad." This mode of expression is very frequent as a matter of option when the positive signs are in fact also used. The reported absence of positive signs for the ideas negatived is therefore often made with as little propriety as if when an ordinary speaker chose to use the negative form "not good," it should be inferred that he was ignorant of the word "bad." It will seldom prove, on proper investigation, that where sign language has reached and retained any high degree of development it will show such poverty as to require the expedient of negation of an affirmative to express an idea which is intrinsically positive.

DETAILS OF POSITIONS OF FINGERS.

The signs of the Indians appear to consist of motions more often than of positions—a fact enhancing the difficulty both of their description and illustration—and the motions when not designedly abbreviated are generally large, free, and striking, seldom minute. It seems also to be the general rule among Indians as among deaf-mutes that the point of the finger is used to trace outlines and the palm of the hand to describe surfaces. From an examination of the identical signs made to each other for the same object by Indians of the same tribe and band, they appear to make many gestures with little regard to the position of the fingers and to vary in such arrangement from individual taste. Some of the elaborate descriptions, giving with great detail the attitude of the fingers of any particular gesturer and the inches traced by his motions, are of as little necessity as would be, when quoting a written word, a careful reproduction of the flourishes of tailed letters and the thickness of down-strokes in individual chirography. The fingers must be in *some* position, but that is frequently accidental, not contributing to the general and essential effect. An example may be given in the sign for *white man* which Medicine Bull, *infra*, page 491, made by drawing the palmar surface of the extended index across the forehead, and in LEAN WOLF'S COMPLAINT, *infra*, page 526, the same motion is made by the back of the thumb pressed upon the middle joint of the index, fist closed. The execution as well as the conception in both cases was the indication of the line of the hat on the forehead, and the position of the fingers in forming the line is altogether immaterial. There is often also a custom or "fashion" in which not only different tribes, but different persons in the same tribe, gesture the same sign with different degrees of beauty, for there is calligraphy in sign language, though no recognized orthography. It is nevertheless better to describe and illustrate with unnecessary minuteness than to fail in reporting a real distinction. There are, also, in fact, many signs formed by mere positions of the fingers, some of which are abbreviations, but in others the arrangement of the fingers in itself forms a picture. An instance of the latter is one of the signs given for the *bear*, viz.: Middle and third finger of right hand clasped down by the thumb, fore and little finger extended crooked downward. See

EXTRACTS FROM DICTIONARY, *infra*. This reproduction of the animal's peculiar claws, with the hand in any position relative to the body, would suffice without the pantomime of scratching in the air, which is added only if the sign without it should not be at once comprehended.

MOTIONS RELATIVE TO PARTS OF THE BODY.

The specified relation of the positions and motions of the hands to different parts of the body is essential to the formation and description of many signs. Those for *speak*, *hear*, and *see*, which must be respectively made relative to the mouth, ear and eye, are manifest examples; and there are others less obviously dependent upon parts of the body, such as the heart or head, which would not be intelligible without apposition. There are also some directly connected with height from the ground and other points of reference. In, however, a large proportion of the signs noted the position of the hands with reference to the body can be varied or disregarded. The hands making the motions can be held high or low, as the gesturer is standing or sitting, or the person addressed is distant or near by. These variations have been partly discussed under the head of abbreviations. While descriptions made with great particularity are cumbrous, it is desirable to give the full detail of that gesture which most clearly carries out the generic conception, with, if possible, also the description of such deviations and abbreviations as are most confusing. For instance, it is well to explain that signs for *yes* and *no*, described with precise detail as in EXTRACTS FROM DICTIONARY, *infra*, are also often made by an Indian when wrapped in his blanket with only a forefinger protruding, the former by a mere downward and the latter by a simple outward bend of that finger. An example may be also taken from the following sign for *lie*, *falsehood*, made by an Arikara, Fig. 233. in which the separated index and second fingers are moved sidewise in a downward line near but below the mouth, which may be compared with other executions of the motion with the same position of the fingers directly forward from the mouth, and with that given in LEAN WOLF'S COMPLAINT, illustrated on page 528, in which the motion is made carelessly across the body. The original sign was undoubtedly made directly from the mouth, the conception being "two tongues," two accounts or

Fig. 233.

opposed statements, one of which must be false, but the finger-position coming to be established for two tongues has relation to the original conception whether or not made near or in reference to the mouth, the latter being understood.

It will thus be seen that sometimes the position of the fingers is material as forming or suggesting a figure without reference to motion, while in other cases the relative position of the hands to each other and to parts of the body are significant without any special arrangement of the fingers. Again, in others, the lines drawn in the air by the hand or hands execute the conception without further detail. In each case only the essential details, when they can be ascertained, should be minutely described.

SUGGESTIONS FOR COLLECTING SIGNS.

The object always should be, not to translate from English into signs, but to ascertain the real signs and their meaning. By far the most satisfactory mode of obtaining this result is to induce Indians or other gesturers observed to tell stories, make speeches, or hold talks in gesture, with one of themselves as interpreter in his own oral language if the latter is understood by the observer, and, if not, the words, not the signs, should be translated by an intermediary linguistic interpreter. It will be easy afterward to dissect and separate the particular signs used. This mode will determine the genuine shade of meaning of each sign, and corresponds with the plan now adopted by the Bureau of Ethnology for the study of the tribal vocal languages, instead of that arising out of exclusively missionary purposes, which was to force a translation of the Bible from a tongue not adapted to its terms and ideas, and then to compile a grammar and dictionary from the artificial result. A little ingenuity will direct the more intelligent or complaisant gesturers to the expression of the thoughts, signs for which are specially sought; and full orderly descriptions of such tales and talks with or even without analysis and illustration are more desired than any other form of contribution.

The original authorities, or the best evidence, for Indian signs—*i. e.*, the Indians themselves—being still accessible, the collaborators in this work should not be content with secondary authority. White sign talkers and interpreters may give some genuine signs, but they are very apt to interpolate their own improvements. Experience has led to the apparently paradoxical judgment that the direct contribution of signs purporting to be those of Indians, made by a habitual practitioner of signs who is not an Indian, is less valuable than that of a discriminating observer who is not himself an actor in gesture speech. The former, being to himself the best authority, unwittingly invents and modifies signs, or describes what he thinks they ought to be, often with a very different conception from that of an Indian. Sign language not being fixed and limited, as is the case with oral languages, expertness in it is

not necessarily a proof of accuracy in any one of its forms. The proper inquiry is not what a sign might, could, would, or should be, or what is the best sign for a particular meaning, but what is any sign actually used for such meaning. If any one sign is honestly invented or adopted by any one man, whether Indian, African, Asiatic, or deaf-mute, it has its value, but it should be identified to be in accordance with the fact and should not be subject to the suspicion that it has been assimilated or garbled in interpretation. Its prevalence and special range present considerations of different interest and requiring further evidence.

The genuine signs alone should be presented to scholars, to give their studies proper direction, while the true article can always be adulterated into a composite jargon by those whose ambition is only to be sign talkers instead of making an honest contribution to ethnologic and philologic science. The few direct contributions of interpreters to the present work are, it is believed, valuable, because they were made without expression of self-conceit or symptom of possession by a pet theory.

MODE IN WHICH RESEARCHES HAVE BEEN MADE.

It is proper to give to all readers interested in the subject, but particularly to those whose collaboration for the more complete work above mentioned is solicited, an account of the mode in which the researches have thus far been conducted and in which it is proposed to continue them. After study of all that could be obtained in printed form, and a considerable amount of personal correspondence, the results were embraced in a pamphlet issued by the Bureau of Ethnology in the early part of 1880, entitled "*Introduction to the Study of Sign Language among the North American Indians as Illustrating the Gesture Speech of Mankind.*" In this, suggestions were made as to points and manner of observation and report, and forms prepared to secure uniformity and accuracy were explained, many separate sheets of which with the pamphlet were distributed, not only to all applicants, but to all known and accessible persons in this country and abroad who, there was reason to hope, would take sufficient interest in the undertaking to contribute their assistance. Those forms, TYPES OF HAND POSITIONS, OUTLINES OF ARM POSITIONS, AND EXAMPLES, thus distributed, are reproduced at the end of this paper.

The main object of those forms was to eliminate the source of confusion produced by attempts of different persons at the difficult description of positions and motions. The comprehensive plan required that many persons should be at work in many parts of the world. It will readily be understood that if a number of persons should undertake to describe in words the same motions, whether of pantomimists on the stage or of other gesturers, even if the visual perception of all the ob-

servers should be the same in the apprehension of the particular gestures, their language in description might be so varied as to give very diverse impressions to a reader who had never seen the gestures described. But with a set form of expressions for the typical positions, and skeleton outlines to be filled up and, when necessary, altered in a uniform style, this source of confusion is greatly reduced. The graphic lines drawn to represent the positions and motions on the same diagrams will vary but little in comparison with the similar attempt of explanation in writing. Both modes of description were, however, requested, each tending to supplement and correct the other, and provision was also made for the notation of such striking facial changes or emotional postures as might individualize or accentuate the gestures. It was also pointed out that the prepared sheets could be used by cutting and pasting them in the proper order, for successive signs forming a speech or story, so as to exhibit the semiotic syntax. Attention was specially directed to the importance of ascertaining the intrinsic idea or conception of all signs, which it was urged should be obtained directly from the persons using them and not by inference.

In the autumn of 1880 the prompt and industrious co-operation of many observers in this country, and of a few from foreign lands, had supplied a large number of descriptions which were collated and collected into a quarto volume of 329 pages, called "*A Collection of Gesture Signs and Signals of the North American Indians, with some comparisons.*"

This was printed on sized paper with wide margins to allow of convenient correction and addition. It was not published, but was regarded as proof, a copy being sent to each correspondent with a request for his annotations, not only in revision of his own contribution, but for its comparison with those made by others. Even when it was supposed that mistakes had been made in either description or reported conception, or both, the contribution was printed as received, in order that a number of skilled and disinterested persons might examine it and thus ascertain the amount and character of error. The attention of each contributor was invited to the fact that, in some instances, a sign as described by one of the other contributors might be recognized as intended for the same idea or object as that furnished by himself, and the former might prove to be the better description. Each was also requested to examine if a peculiar abbreviation or fanciful flourish might not have induced a difference in his own description from that of another contributor with no real distinction either in conception or essential formation. All collaborators were therefore urged to be candid in admitting, when such cases occurred, that their own descriptions were mere unessential variants from others printed, otherwise to adhere to their own and explain the true distinction. When the descriptions showed substantial identity, they were united with the reference to all the authorities giving them.

Many of these copies have been returned with valuable annotations,

not only of correction but of addition and suggestion, and are now being collated again into one general revision.

The above statement will, it is hoped, give assurance that the work of the Bureau of Ethnology has been careful and thorough. No scheme has been neglected which could be contrived and no labor has been spared to secure the accuracy and completeness of the publication still in preparation. It may also be mentioned that although the writer has made personal observations of signs, no description of any sign has been printed by him which rests on his authority alone. Personal controversy and individual bias were thus avoided. For every sign there is a special reference either to an author or to some one or more of the collaborators. While the latter have received full credit, full responsibility was also imposed, and that course will be continued.

No contribution has been printed which asserted that any described sign is used by "all Indians," for the reason that such statement is not admissible evidence unless the authority had personally examined all Indians. If any credible person had affirmatively stated that a certain identical, or substantially identical, sign had been found by him, actually used by Abnaki, Absaroka, Arikara, Assiniboins, etc., going through the whole list of tribes, or any definite portion of that list, it would have been so inserted under the several tribal heads. But the expression "all Indians," besides being insusceptible of methodical classification, involves hearsay, which is not the kind of authority desired in a serious study. Such loose talk long delayed the recognition of Anthropology as a science. It is true that some general statements of this character are made by some old authors quoted in the Dictionary, but their descriptions are reprinted, as being all that can be used of the past, for whatever weight they may have, and they are kept separate from the linguistic classification given below.

Regarding the difficulties met with in the task proposed, the same motto might be adopted as was prefixed to Austin's *Chironomia*: "*Non sum nescius, quantum susceperim negotii, qui motus corporis exprimere verbis, imitari scriptura conatus sim voces.*" *Rhet. ad Herenn*, l. 3. If the descriptive recital of the signs collected had been absolutely restricted to written or printed words the work would have been still more difficult and the result less intelligible. The facilities enjoyed of presenting pictorial illustrations have been of great value and will give still more assistance in the complete work than in the present paper.

In connection with the subject of illustrations it may be noted that a writer in the *Journal of the Military Service Institution of the United States*, Vol. II, No. 5, the same who had before invented the mode of describing signs by "means" mentioned on page 330 *supra*, gives a curious distinction between deaf-mute and Indian signs regarding their respective capability of illustration, as follows: "This French system is taught, I believe, in most of the schools for deaf-mutes in this country, and in Europe; but so great has been the difficulty of fixing the hands

in space, either by written description or illustrated cuts, that no text books are used. I must therefore conclude that the Indian sign language is not only the more natural, but the more simple, as the gestures can be described quite accurately in writing, and I think can be illustrated." The readers of this paper will also, probably, "think" that the signs of Indians can be illustrated, and as the signs of deaf-mutes are often identical with the Indian, whether expressing the same or different ideas, and when not precisely identical are always made on the same principle and with the same members, it is not easy to imagine any greater difficulty either in their graphic illustration or in their written description. The assertion is as incorrect as if it were paraphrased to declare that a portrait of an Indian in a certain attitude could be taken by a pencil or with the camera while by some occult influence the same artistic skill would be paralysed in attempting that of a deaf-mute in the same attitude. In fact, text books on the "French system" are used and one in the writer's possession published in Paris twenty-five years ago, contains over four hundred illustrated cuts of deaf-mute gesture signs.

The proper arrangement and classification of signs will always be troublesome and unsatisfactory. There can be no accurate translation either of sentences or of words from signs into written English. So far from the signs representing words as logographs, they do not in their presentation of the ideas of actions, objects, and events, under physical forms, even suggest words, which must be skillfully fitted to them by the glossarist and laboriously derived from them by the philologer. The use of words in formulation, still more in terminology, is so wide a departure from primitive conditions as to be incompatible with the only primordial language yet discovered. No vocabulary of signs will be exhaustive for the simple reason that the signs are exhaustless, nor will it be exact because there cannot be a correspondence between signs and words taken individually. Not only do words and signs both change their meaning from the context, but a single word may express a complex idea, to be fully rendered only by a group of signs, and, *vice versâ*, a single sign may suffice for a number of words. The elementary principles by which the combinations in sign and in the oral languages of civilization are effected are also discrepant. The attempt must therefore be made to collate and compare the signs according to general ideas, conceptions, and, if possible, the ideas and conceptions of the gesturers themselves, instead of in order of words as usually arranged in dictionaries.

The hearty thanks of the writer are rendered to all his collaborators, a list of whom is given below, and will in future be presented in a manner more worthy of them. It remains to give an explanation of the mode in which a large collection of signs has been made directly by the officers of the Bureau of Ethnology. Fortunately for this undertaking, the policy of the government brought to Washington during the year

1880 delegations, sometimes quite large, of most of the important tribes. Thus the most intelligent of the race from many distant and far separated localities were here in considerable numbers for weeks, and indeed, in some cases, months, and, together with their interpreters and agents, were, by the considerate order of the honorable Secretary of the Interior, placed at the disposal of this Bureau for all purposes of gathering ethnologic information. The facilities thus obtained were much greater than could have been enjoyed by a large number of observers traveling for a long time over the continent for the same express purpose. The observations relating to signs were all made here by the same persons, according to a uniform method, in which the gestures were obtained directly from the Indians, and their meaning (often in itself clear from the context of signs before known) was translated sometimes through the medium of English or Spanish, or of a native language known in common by some one or more of the Indians and by some one of the observers. When an interpreter was employed, he translated the words used by an Indian in his oral paraphrase of the signs, and was not relied upon to explain the signs according to his own ideas. Such translations and a description of minute and rapidly-executed signs, dictated at the moment of their exhibition, were sometimes taken down by a phonographer, that there might be no lapse of memory in any particular, and in many cases the signs were made in successive motions before the camera, and prints secured as certain evidence of their accuracy. Not only were more than one hundred Indians thus examined individually, at leisure, but, on occasions, several parties of different tribes, who had never before met each other, and could not communicate by speech, were examined at the same time, both by inquiry of individuals whose answers were consulted upon by all the Indians present, and also by inducing several of the Indians to engage in talk and story-telling in signs between themselves. Thus it was possible to notice the difference in the signs made for the same objects and the degree of mutual comprehension notwithstanding such differences. Similar studies were made by taking Indians to the National Deaf Mute College and bringing them in contact with the pupils.

By far the greater part of the actual work of the observation and record of the signs obtained at Washington has been ably performed by Dr. W. J. HOFFMAN, the assistant of the present writer. When the latter has made personal observations the former has always been present, taking the necessary notes and sketches and superintending the photographing. To him, therefore, belongs the credit for all those references in the following "LIST OF AUTHORITIES AND COLLABORATORS," in which it is stated that the signs were obtained at Washington from Indian delegations. Dr. HOFFMAN acquired in the West, through his service as acting assistant surgeon, United States Army, at a large reservation, the indispensable advantage of becoming acquainted with the Indian character so as to conduct skillfully such researches as that in

question, and in addition has the eye and pencil of an artist, so that he seizes readily, describes with physiological accuracy, and reproduces in action and in permanent illustration all shades of gesture exhibited. Nearly all of the pictorial illustrations in this paper are from his pencil. For the remainder, and for general superintendence of the artistic department of the work, thanks are due to Mr. W. H. HOLMES, whose high reputation needs no indorsement here.

LIST OF AUTHORITIES AND COLLABORATORS.

1. A list prepared by WILLIAM DUNBAR, dated Natchez, June 30, 1800, collected from tribes then "west of the Mississippi," but probably not from those very far west of that river, published in the *Transactions of the American Philosophical Society*, vol. vi, pp. 1–8, as read January 16, 1801, and communicated by Thomas Jefferson, president of the society.

2. The one published in *An Account of an Expedition from Pittsburgh to the Rocky Mountains, performed in the years* 1819–1820, *Philadelphia*, 1823, vol. i, pp. 378–394. This expedition was made by order of the Hon. J. C. Calhoun, Secretary of War, under the command of Maj. S. H. LONG, of the United States Topographical Engineers, and is commonly called James' Long's Expedition. This list appears to have been collected chiefly by Mr. T. Say, from the Pani, and the Kansas, Otos, Missouris, Iowas, Omahas, and other southern branches of the great Dakota family.

3. The one collected by Prince MAXIMILIAN von WIED-NEUWIED in *Reise in das Innere Nord-America in den Jahren* 1832 *bis* 1834. *Coblenz*, 1839 [— 1841], vol. ii, pp. 645–653. His statement is, "the Arikaras, Mandans, Minnitarris [Hidatsa], Crows [Absaroka], Cheyennes, Snakes [Shoshoni], and Blackfeet [Satsika] all understand certain signs, which, on the contrary, as we are told, are unintelligible to the Dakotas, Assiniboins, Ojibwas, Krihs [Crees], and other nations. The list gives examples of the sign language of the former." From the much greater proportion of time spent and information obtained by the author among the Mandans and Hidatsa then and now dwelling near Fort Berthold, on the Upper Missouri, it might be safe to consider that all the signs in his list were in fact procured from those tribes. But as the author does not say so, he is not made to say so in this work. If it shall prove that the signs now used by the Mandans and Hidatsa more closely resemble those on his list than do those of other tribes, the internal evidence will be verified. This list is not published in the English edition, *London*, 1843, but appears in the German, above cited, and in the French, *Paris*, 1840. Bibliographic reference is often made to this distinguished explorer as "Prince Maximilian," as if there were but one possessor of that Christian name among princely families. For brevity the reference in this paper will be *Wied*.

No translation of this list into English appears to have been printed in any shape before that recently published by the present writer in the *American Antiquarian*, vol. ii, No. 3, while the German and French editions are costly and difficult of access, so the collection cannot readily be compared by readers with the signs now made by the same tribes.

The translation now presented is based upon the German original, but in a few cases where the language was so curt as not to give a clear idea, was collated with the French edition of the succeeding year, which, from some internal evidence, appears to have been published with the assistance or supervision of the author. Many of the descriptions are, however, so brief and indefinite in both their German and French forms that they necessarily remain so in the present translation. The princely explorer, with the keen discrimination shown in all his work, doubtless observed what has escaped many recent reporters of Indian signs, that the latter depend much more upon motion than mere position, and are generally large and free, seldom minute. His object was to express the general effect of the motion rather than to describe it with such precision as to allow of its accurate reproduction by a reader who had never seen it. To have presented the signs as now desired for comparison, toilsome elaboration would have been necessary, and even that would not in all cases have sufficed without pictorial illustration.

On account of the manifest importance of determining the prevalence and persistence of the signs as observed half a century ago, an exception is made to the general arrangement hereafter mentioned by introducing after the *Wied* signs remarks of collaborators who have made special comparisons, and adding to the latter the respective names of those collaborators—as, (*Matthews*), (*Boteler*). It is hoped that the work of those gentlemen will be imitated, not only regarding the *Wied* signs, but many others.

4. The signs given to publication by Capt. R. F. BURTON, which, it would be inferred, were collected in 1860–'61, from the tribes met or learned of on the overland stage route, including Southern Dakotas, Utes, Shoshoni, Arapahos, Crows, Pani, and Apaches. They are contained in *The City of the Saints, New York*, 1862, pp. 123–130.

Information has been recently received to the effect that this collection was not made by the distinguished English explorer from his personal observation, but was obtained by him from one man in Salt Lake City, a Mormon bishop, who, it is feared, gave his own ideas of the formation and use of signs rather than their faithful description.

5. A list read by Dr. D. G. MACGOWAN, at a meeting of the American Ethnological Society, January 23, 1866, and published in the *Historical Magazine*, vol. x, 1866, pp. 86, 87, purporting to be the signs of the Caddos, Wichitas, and Comanches.

6. Annotations by Lieut. HEBER M. CREEL, Seventh United States Cavalry, received in January, 1881. This officer is supposed to be specially familiar with the Cheyennes, among whom he lived for eighteen months; but his recollection is that most of the signs described by him were also observed among the Arapaho, Sioux, and several other tribes.

7. A special contribution from Mr. F. F. GERARD, of Fort A. Lincoln, D. T., of signs obtained chiefly from a deaf-mute Dakota, who has trav-

eled among most of the Indian tribes living between the Missouri River and the Rocky Mountains. Mr. Gerard's own observations are based upon the experience of thirty-two years' residence in that country, during which long period he has had almost daily intercourse with Indians. He states that the signs contributed by him are used by the Blackfeet, (Satsika), Absaroka, Dakota, Hidatsa, Mandan, and Arikara Indians, who may in general be considered to be the group of tribes referred to by the Prince of Wied.

In the above noted collections the generality of the statements as to locality of the observation and use of the signs rendered it impossible to arrange them in the manner considered to be the best to study the diversities and agreements of signs. For that purpose it is more convenient that the names of the tribe or tribes among which the described signs have been observed should catch the eye in immediate connection with them than that those of the observers only should follow. Some of the latter indeed have given both similar and different signs for more than one tribe, so that the use of the contributor's name alone would create confusion. To print in every case the name of the contributor, together with the name of the tribe, would seriously burden the paper and be unnecessary to the student, the reference being readily made to each authority through this LIST which also serves as an index. The seven collections above mentioned will therefore be referred to by the names of the authorities responsible for them. Those which now follow are arranged alphabetically by tribes, under headings of Linguistic Families according to Major J. W. POWELL'S classification, which are also given below in alphabetic order. Example: The first authority is under the heading ALGONKIAN, and, concerning only the Abnaki tribe, is referred to as (*Abnaki* I), Chief MASTA being the personal authority.

ALGONKIAN.

Abnaki I. A letter dated December 15, 1879, from H. L. MASTA, chief of the Abnaki, residing near Pierreville, Quebec.

Arapaho I. A contribution from Lieut. H. R. LEMLY, Third United States Artillery, compiled from notes and observations taken by him in 1877, among the Northern Arapahos.

Arapaho II. A list of signs obtained from O-QO-HIS'-SA (the Mare, better known as Little Raven) and NA'-WATC (Left Hand), members of a delegation of Arapaho and Cheyenne Indians, from Darlington, Ind. T., who visited Washington during the summer of 1880.

Cheyenne I. Extracts from the *Report of Lieut.* J. W. ABERT, *of his Examination of New Mexico in the years* 1846–'47, in EX. Doc. No. 41, Thirtieth Congress, first session, Washington, 1848, p. 417, *et seq.*

Cheyenne II. A list prepared in July, 1879, by Mr. FRANK H. CUSHING, of the Smithsonian Institution, from continued interviews with TITC-KE-MA'-TSKI (Cross-Eyes), an intelligent Cheyenne, then employed at that Institution.

Cheyenne III. A special contribution with diagrams from Mr. BEN CLARK, scout and interpreter, of signs collected from the Cheyennes during his long residence among that tribe.

Cheyenne IV. Several communications from Col. RICHARD I. DODGE, A. D. C., United States Army, author of *The Plains of the Great West and their Inhabitants, New York*, 1877, relating to his large experience with the Indians of the prairies.

Cheyenne V. A list of signs obtained from WA-Und (Bob-tail) and MO-HI'NUK-MA-HA'-IT (Big Horse), members of a delegation of Arapaho and Cheyenne Indians from Darlington, Ind. T., who visited Washington during the summer of 1880.

Ojibwa I. The small collection of J. G. KOHL, made about the middle of the present century, among the Ojibwas around Lake Superior. Published in his *Kitchigami. Wanderings Around Lake Superior, London*, 1860.

Ojibwa II. Several letters from the Very Rev. EDWARD JACKER, Pointe St. Ignace, Mich., respecting the Ojibwas.

Ojibwa III. A communication from Rev. JAMES A. GILFILLAN, White Earth, Minn., relating to signs observed among the Ojibwas during his long period of missionary duty, still continuing.

Ojibwa IV. A list from Mr. B. O. WILLIAMS, Sr., of Owosso, Mich., from recollection of signs observed among the Ojibwas of Michigan sixty years ago.

Ojibwa V. Contributions received in 1880 and 1881 from Mr. F. JACKER, of Portage River, Houghton County, Michigan, who has resided many years among and near the tribe mentioned.

Sac, Fox, and Kickapoo I. A list from Rev. H. F. BUCKNER, D. D., of Eufaula, Ind. T., consisting chiefly of tribal signs observed by him among the Sac and Fox, Kickapoos, &c., during the early part of the year 1880.

DAKOTAN.

Absaroka I. A list of signs obtained from DE-E'-KI-TCIS (Pretty Eagle), É-TCI-DI-KA-HÄTC'-KI (Long Elk), and PE-RI'-TCI-KA'-DI-A (Old Crow), members of a delegation of Absaroka or Crow Indians from Montana Territory, who visited Washington during the months of April and May, 1880.

Dakota I. A comprehensive list, arranged with great care and skill, from Dr. CHARLES E. MCCHESNEY, acting assistant surgeon, United States Army, of signs collected among the Dakotas (Sioux) near Fort Bennett, Dakota, during the year 1880. Dr. McChesney requests that recognition should be made of the valuable assistance rendered to him by Mr. WILLIAM FIELDEN, the interpreter at Cheyenne Agency, Dakota Territory.

Dakota II. A short list from Dr. BLAIR D. TAYLOR, assistant surgeon, United States Army, from recollection of signs observed among the Sioux during his late service in the region inhabited by that tribe.

Dakota III. A special contribution from Capt. A. W. Corliss, Eighth United States Infantry, of signs observed by him during his late service among the Sioux.

Dakota IV. A copious contribution with diagrams from Dr. William H. Corbusier, assistant surgeon, United States Army, of signs obtained from the Ogalala Sioux at Pine Ridge Agency, Dakota Territory, during 1879–'80.

Dakota V. A report of Dr. W. J. Hoffman, from observations among the Teton Dakotas while acting assistant surgeon, United States Army, and stationed at Grand River Agency, Dakota, during 1872–73.

Dakota VI. A list of signs obtained from Pe-zhi′ (Grass), chief of the Blackfoot Sioux; Na-zu′-la-ta^{n}-ka (Big Head), chief of the Upper Yanktonais; and Ce-ta^{n}′-ki^{n}-ya^{n} (Thunder Hawk), chief of the Uncpapas, Teton Dakotas, located at Standing Rock, Dakota Territory, while at Washington in June, 1880.

Dakota VII. A list of signs obtained from Shun′-ka Lu-ta (Red Dog), an Ogalala chief from the Red Cloud Agency, who visited Washington in company with a large delegation of Dakotas in June, 1880.

Dakota VIII. A special list obtained from Ta-ta^{n}′ka Wa-ka^{n} (Medicine Bull), and other members of a delegation of Lower Brulé Dakotas, while at Washington during the winter of 1880–'81.

Hidatsa I. A list of signs obtained from Tce-caq′-a-daq-a-qic (Lean Wolf), chief of the Hidatsa, located at Fort Berthold, Dakota Territory, while at Washington with a delegation of Sioux Indians, in June, 1880.

Mandan and Hidatsa I. A valuable and illustrated contribution from Dr. Washington Matthews, assistant surgeon, United States Army, author of *Ethnography and Philology of the Hidatsa Indians, Washington*, 1877, &c., lately prepared from his notes and recollections of signs observed during his long service among the Mandan and Hidatsa Indians of the Upper Missouri.

Omaha I. A special list from Rev. J. Owen Dorsey, lately missionary at Omaha Agency, Nebraska, from observations made by him at that agency in 1880.

Oto I. An elaborate list, with diagrams, from Dr. W. C. Boteler, United States Indian service, collected from the Otos at the Oto Agency, Nebraska, during 1879–'80.

Oto and Missouri I. A similar contribution by the same authority respecting the signs of the Otos and Missouris, of Nebraska, collected during the winter of 1879–'80, in the description of many of which he was joined by Miss Katie Barnes.

Ponka I. A short list from Rev. J. Owen Dorsey, obtained by him in 1880 from the Ponkas in Nebraska.

Ponka II. A short list obtained at Washington from Khi-dha-skă, (White Eagle), and other chiefs, a delegation from Kansas in January, 1881.

IROQUOIAN.

Iroquois I. A list of signs contributed by the Hon. Horatio Hale, author of "Philology" of the Wilkes Exploring Expedition, &c., now

residing at Clinton, Ontario, Canada, obtained in June, 1880, from SAKAYENKWARATON (Disappearing Mist), familiarly known as John Smoke Johnson, chief of the Canadian division of the Six Nations, or Iroquois proper, now a very aged man, residing at Brantford, Canada.

Wyandot I. A list of signs from HEN'-TO (Gray Eyes), chief of the Wyandots, who visited Washington during the spring of 1880, in the interest of that tribe, now dwelling in Indian Territory.

KAIOWAN.

Kaiowa I. A list of signs from SITTIMGEA (Stumbling Bear), a Kaiowa chief from Indian Territory, who visited Washington in June, 1880.

KUTINEAN.

Kutine I. A letter from J. W. POWELL, Esq., Indian superintendent, British Columbia, relating to his observations among the Kutine and others.

PANIAN.

Arikara I. A list of signs obtained from KUA-NUQ'-KNA-UI'-UQ (Son of the Star), chief of the Arikaras, residing at Fort Berthold, Dakota Territory, while at Washington with a delegation of Indians, in June, 1880.

Pani I. A short list obtained from "ESAU," a Pani Indian, acting as interpreter to the Ponka delegation at Washington, in January, 1881.

PIMAN.

Pima and Papago I. A special contribution obtained from ANTONITO, son of the chief of the Pima Indians in Arizona Territory, while on a visit to Washington in February, 1881.

SAHAPTIAN.

Sahaptin I. A list contributed by Rev. G. L. DEFFENBAUGH, of Lapwai, Idaho, giving signs obtained at Kamiah, Idaho, chiefly from FELIX, chief of the Nez Percés, and used by the Sahaptin or Nez Percés.

SHOSHONIAN.

Comanche I. Notes from Rev. A. J. HOLT, Denison, Texas, respecting the Comanche signs, obtained at Anadarko, Indian Territory.

Comanche II. Information obtained at Washington, in February, 1880, from Maj. J. M. HAWORTH, Indian inspector, relating to signs used by the Comanches of Indian Territory.

Comanche III. A list of signs obtained from KOBI (Wild Horse), a Comanche chief from Indian Territory, who visited Washington in June, 1880.

Pai-Ute I. Information obtained at Washington from NA'TOI, a Pai-Ute chief, who was one of a delegation of that tribe to Washington in January, 1880.

Shoshoni and Banak I. A list of signs obtained from TENDOY (The Climber), TISIDIMIT, PETE, and WI'AGAT, members of a delegation of

Shoshoni and Banak chiefs from Idaho, who visited Washington during the months of April and May, 1880.

Ute I. A list of signs obtained from ALEJANDRE, GA-LO-TE, AUGUSTIN, and other chiefs, members of a delegation of Ute Indians of Colorado, who visited Washington during the early months of the year 1880.

TINNEAN.

Apache I. A list of signs obtained from HUERITO (Little Blonde), AGUSTIN VIJEL, and SANTIAGO LARGO (James Long), members of a delegation of Apache chief from Tierra Amarilla, New Mexico, who were brought to Washington in the months of March and April, 1880.

Apache II. A list of signs obtained from NA'-KA'-NA'-NI-TEN (White Man), an Apache chief from Indian Territory, who visited Washington in June, 1880.

Apache III. A large collection made during the summer of 1880, by Dr. FRANCIS H. ATKINS, acting assistant surgeon, United States Army, from the Mescalero Apaches, near South Fork, N. Mex.

Kutchin I. A communication, received in 1881, from Mr. IVAN PETROFF, special agent United States census, transmitting a dialogue, taken down by himself in 1866, between the Kenaitze Indians on the lower Kinnik River, in Alaska, and some natives of the interior who called themselves *Tennanah* or *Mountain-River-Men*, belonging to the Tinne Kutchin tribe.

WICHITAN.

Wichita I. A list of signs from Rev. A. J. HOLT, missionary, obtained from KIN CHE-ESS (Spectacles), medicine-man of the Wichitas, at the Wichita Agency, Indian Territory, in 1879.

Wichita II. A list of signs from TSODIÁKO (Shaved Head Boy), a Wichita chief, from Indian Territory, who visited Washington in June, 1880.

ZUÑIAN.

Zuñi I. Some preliminary notes received in 1880 from Rev. TAYLOR F. EALY, missionary among the Zuñi, upon the signs of that body of Indians.

FOREIGN CORRESPONDENCE.

Valuable contributions have been received in 1880–'81 and collated under their proper headings, from the following correspondents in distant countries:

Rev. HERMAN N. BARNUM, D. D., of Harpoot, Turkey, furnishes a list of signs in common use among Turks, Armenians, and Koords in that region.

Miss L. C. LLOYD, Charleton House, Mowbray, near Cape Town, Africa, gives information concerning the gestures and signals of the Bushmen.

Rev. LORIMER FISON, Navuloa, Fiji, notes in letters comparisons between the signs and gestures of the Fijians and those of the North American Indians. As this paper is passing through the press a *Col-*

lection is returned with annotations by him and also by Mr. WALTER CAREW, Commissioner for the Interior of Navitilevu. The last named gentleman describes some signs of a Fijian uninstructed deaf-mute.

Mr. F. A. VON RUPPRECHT, Kepahiang, Sumatra, supplies information and comparisons respecting the signs and signals of the Redjangs and Lelongs, showing agreement with some Dakota, Comanche, and Ojibwa signs.

Letters from Mr. A. W. HOWITT, F. G. S., Sale, Gippsland, Victoria, upon Australian signs, and from Rev. JAMES SIBREE, jr., F. R. G. S., relative to the tribes of Madagascar, are gratefully acknowledged.

Many other correspondents are now, according to their kind promises, engaged in researches, the result of which have not yet been received. The organization of those researches in India and Ceylon has been accomplished through the active interest of Col. H. S. OLCOTT, U. S. Commissioner, Breach Candy, Bombay.

Grateful acknowledgment must be made to Prof. E. A. FAY, of the National Deaf Mute College, through whose special attention a large number of the natural signs of deaf-mutes, remembered by them as having been invented and used before instruction in conventional signs, indeed before attending any school, was obtained. The gentlemen who made the contributions in their own MS., and without prompting, are as follows: Messrs. M. BALLARD, R. M. ZIEGLER, J. CROSS, PHILIP J. HASENSTAB, and LARS LARSON. Their names respectively follow their several descriptions. Mr. BALLARD is an instructor in the college, and the other gentlemen were pupils during the session of 1880.

Similar thanks are due to Mr. J. L. NOYES, superintendent of the Minnesota Institution for the education of the Deaf and Dumb, Faribault, Minn., and to Messrs. GEORGE WING and D. H. CARROLL, teachers in that institution, for annotations and suggestions respecting deaf-mute signs. The notes made by the last named gentlemen are followed by their respective names in reference.

Special thanks are also rendered to Prof. JAMES D. BUTLER, of Madison, Wis., for contribution of Italian gesture-signs, noted by him in 1843, and for many useful suggestions.

Other Italian signs are quoted from the Essay on Italian gesticulations by his eminence Cardinal WISEMAN, in his *Essays on Various Subjects London*, 1855, Vol. III, pp. 533–555. Many Neapolitan signs are extracted from the illustrated work of the canon ANDREA DE JORIO, *La Mimica degli Antichi investigata nel gestire Napoletano, Napoli*, 1832.

A small collection of Australian signs has been extracted from R. BROUGH SMYTH'S *The Aborigines of Victoria, London*, 1878.

EXTRACTS FROM DICTIONARY.

In the printed but unpublished *Collection* before mentioned, page 396, nearly three hundred quarto pages are devoted to descriptions of signs arranged in alphabetic order. A few of these are now presented to show the method adopted. They have been selected either as having connection with the foregoing discussion of the subject or because for some of them pictorial illustrations had already been prepared. There is propriety in giving all the signs under some of the title words when descriptions of only one or two of those signs have been used in the foregoing remarks. This prevents an erroneous inference that the signs so mentioned are the only or the common or the generally prevailing signs for the idea conveyed. This course has involved some slight repetition both of descriptions and of illustrations, as it seemed desirable that they should appear to the eye in the several connections indicated. The extracts are rendered less interesting and instructive by the necessity for omitting cross-references which would show contrasts and similarities for comparison, but would require a much larger part of the collected material to be now printed than is consistent with the present plan. Instead of occupying in this manner the remaining space allotted to this paper, it was decided to present, as of more general interest, the descriptions of TRIBAL SIGNS, PROPER NAMES, PHRASES, DIALOGUES, NARRATIVES, DISCOURSES, and SIGNALS, which follow the EXTRACTS.

It will be observed that in the following extracts there has been an attempt to supply the conceptions or origin of the several signs. When the supposed conception, obtained through collaborators, is printed before the authority given as reference, it is understood to have been gathered from an Indian as being his own conception, and is therefore of special value. When printed after the authority and within quotation marks it is in the words of the collaborator as offered by himself. When printed after the authority and without quotation marks it is suggested by this writer.

The letters of the alphabet within parentheses, used in some of the descriptions, refer to the corresponding figures in TYPES OF HAND POSITIONS at the end of this paper. When such letters are followed by Arabic numerals it is meant that there is some deviation, which is described in the text, from that type of hand position corresponding with the letter which is still used as the basis of description. Example: In the first description from (*Sahaptin* I) for *bad, mean*, page 412, (G) refers to the type of hand position so marked, being identically that position, but in the following reference, to (R 1), the type referred to by the letter

R has the palm to the front instead of backward, being in all other respects the position which it is desired to illustrate; (R), therefore, taken in connection with the description, indicates that change, and that alone. This mode of reference is further explained in the EXAMPLES at the end of this paper.

References to another title word as explaining a part of a description or to supply any other portions of a compound sign will always be understood as being made to the description by the same authority of the sign under the other title-word. Example: In the second description by (*Sahaptin* I) for *bad*, *mean*, above mentioned, the reference to GOOD is to that sign for *good* which is contributed by Rev. G. L. DEFFENBAUGH, and is referred to as (*Sahaptin* I.).

ANTELOPE.

Pass the open right hand outward from the small of the back. (*Wied.*) This, as explained by Indians lately examined, indicates the lighter coloration upon the animal's flanks. A Ute who could speak Spanish accompanied it with the word *blanco*, as if recognizing that it required explanation.

With the index only extended, hold the hand eighteen or twenty inches transversely in front of the head, index pointing to the left, then rub the sides of the body with the flat hands. (*Cheyenne* IV; *Dakota* VI.) "The latter sign refers to the white sides of the animal; the former could not be explained."

FIG. 234.

FIG. 235.

Extend and separate the forefingers and thumbs, nearly close all the other fingers, and place the hands with backs outward above and a little in front of the ears, about four inches from the head, and shake them back and forth several times. Antelope's horns. This is an Arapaho sign. (*Dakota* I, II, IV.)

Close the right hand, leaving the end of the index in the form of a hook, and the thumb extended as in Fig. 234; then wave the hand quickly back and forth a short distance, opposite the temple. (*Hidatsa* I; *Arikara* I.) "Represents the pronged horn of the animal. This is the sign ordinarily used, but it was noticed that in conversing with one of the Dakotas the sign of the latter (*Dakota* VI) was used several times, to be more readily understood."

Place both hands, fingers fully extended and spread, close to the sides of the head. *Wied's* sign was readily understood as signifying the white flanks. (*Apache* I.)

In connection with the above signs Fig. 235 is presented, which was drawn by Running Antelope, an Uncpapa Dakota, as his personal totem, or proper name.

BAD, MEAN.

Make the sign for GOOD and then that of NOT. (*Long.*)

Close the hand, and open it whilst passing it downward. (*Wied.*) This is the same as my description; but differently worded, possibly notes a less forcible form. I say, however, that the arm is "extended." The precise direction in which the hand is moved is not, I think, essential. (*Matthews.*) This sign is invariably accompanied by a countenance expressive of contempt. (*F. Jacker.*)

Scatter the dexter fingers outward, as if spurting away water from them. (*Burton.*)

(1) Right hand partially elevated, fingers closed, thumb clasping the tips; (2) sudden motion downward and outward accompanied by equally sudden opening of fingers and snapping of the fingers from the thumb. (*Cheyenne* II.)

Right hand closed back to front is moved forcibly downward and forward, the fingers being violently opened at instant of stopping the motion of hand. (*Cheyenne* IV.)

Right hand closed (B) carried forward in front of the body toward the right and downward, during which the hand is opened, fingers downward, as if dropping out the contents. (*Dakota* I.) "Not worth keeping."

Half close the fingers of the right hand, hook the thumb over the fore and middle fingers; move the hand, back upward, a foot or so toward the object referred to, and suddenly let the fingers fly open. Scattered around, therefore bad. An Arapaho sign. (*Dakota* IV.)

Close the fingers of the right hand, resting the tips against the thumb, then throw the hand downward and outward toward the right to arm's length, and spring open the fingers. Fig. 236. (*Dakota* VI, VII, VIII; *Ponka* II; *Pani* I.)

FIG. 236.

The sign most commonly used for this idea is made by the hand being closed near the breast, with the back toward the breast, then as the arm is suddenly extended the hand is opened and the fingers separated from each other. (*Mandan and Hidatsa* I.)

Hands open, palms turned in; move one hand toward, and the other from, the body; then *vice versâ.* (*Omaha* I.)

Throw the clinched right hand forward, downward, and outward, and when near at arm's length, suddenly snap the fingers from the thumb as

if sprinkling water. (*Wyandot* I.) "To throw away contemptously; not worth keeping."

Raise hand in front of breast, fingers hooked, thumb resting against second finger, palm downward (G), then with a nervous movement throw the hand downward to the right and a little behind the body, with an expression of disgust on the face. During motion of hand the fingers are suddenly extended as though throwing something out of the hand, and in final position the fingers and thumb are straight and separated, palm backward (R 1). (*Sahaptin* I.) "Away with it!"

Another: Same motion of arm and hand as in *good*. But in the first position fingers are closed, and as the hand moves to the right they are thrown open, until in final position all are extended as in final for *good*. (*Sahaptin* I.)

Extend the right hand, palm downward, and move it in a horizontal line from the body, then suddenly turn the hand over as if throwing water from the back of it or the index. (*Comanche* I.) "Good, no."

Pass the flat right hand, interruptedly, downward and backward past the right side. (*Pima and Papago* I.) "Putting aside."

Deaf-mute natural signs:

Hold forward the closed hand with the little finger up, at the same time nodding the head. (*Ballard.*)

Draw the tongue out a little and then shake the head with a displeased look. (*Larson.*)

Use the sign for *handsome* (see first part of the sign for GOOD), at the same time shake the head as if to say "no." (*Ziegler.*)

Deaf-mute signs:

The hand closed (except the little finger which is extended and raised), and held forward with the fingers to the front is the sign for *bad* illustrated in the Report for 1879 of the Ohio Institution for the Deaf and Dumb. This sign is used among the deaf-mutes in England.

BEAR, animal.

Pass the hand before the face to mean ugliness, at the same time grinning and extending the fingers like claws. (*Burton.*)

Hands in front of and about eight inches above the elbows, fingers slightly bent and open, thumbs and palms to the front to represent claws,—or bear in standing position. Sometimes accompanied by clawing motion. (*Creel.*)

(1) Middle and third finger of right hand clasped down by the thumb, forefinger and little finger extended, crooked downward; (2) the motion of scratching made in the air. (*Cheyenne* II.) Fig. 237.

FIG. 237.

Fingers of both hands closed, except the thumb and little finger, which are extended, and point straight toward the front, hands horizontal, backs upward, are held in front of their respective sides near the body, and then moved directly forward

with short, sharp jerking motions. (*Dakota* I.) "From the motion of the bear in running." This is also reported as an Arapaho sign. (*Dakota* IV.) The paws and claws are represented.

Seize a short piece of wood, say about two feet long, wave in the right hand, and strike a blow at an imaginary person. (*Omaha* I.)

Another: Seize a short thing about six inches long, hold it as dagger, pretend to thrust it downward under the breast-bone repeatedly, and each time farther, grunting or gasping in doing so; withdraw the stick, holding it up, and, showing the blood, point to the breast with the left forefinger, meaning to say *so do thou when you meet the bear*. (*Omaha* I.)

Another: Pretend to stab yourself with an arrow in various parts of the body, then point towards the body with the left-hand forefinger. (*Omaha* I.)

Arms are flexed and hands clasped about center of breast; then slowly fall with arms pendulous and both hands in type-position (Q). The sign is completed by slowly lifting the hands and arms several times in imitation of the animal's locomotion. Movement and appearance of animal's front feet. (*Oto* I.)

Hold the closed right hand at the height of the elbow before the right side, palm downward, extend and curve the thumb and little finger so that their tips are nearly directed toward one another before the knuckles of the closed fingers; then push the hand forward several times. (*Kaiowa* I; *Comanche* III; *Apache* II; *Wichita* II.) "Paw and long claws." Fig. 238.

Fig. 238.

Hold both closed hands before the body, palms down, and about eight inches apart; reach forward a short distance, relaxing the fingers as if grasping something with them, and draw them back again as the hands are withdrawn to their former position. Ordinarily but one hand is used, as in Fig. 239. (*Ute* I.) "Scratching, and grasping with the claws."

Fig. 239.

The right hand thrown in the position as for *horse*, as follows: Elevate the right-hand, extended, with fingers joined, outer edge toward the ground, in front of the body or right shoulder, and pointing forward, resting the curved thumb against the palmar side of the index, then extend both hands with fingers extended and curved, separated, palms down, and push them forward several times, making a short arch. (*Apache* I.) "The animal that scratches with long claws."

Fig. 240.

Fig. 240 is from a Moqui rock etching, contributed by Mr. G. K. Gilbert, showing the pictorial mode of representing the animal.

Deaf-mute sign :

Claw both shoulders with the fingers. (*Wing.*)

——— Grizzly.

Right hand flat and extended, held at height of shoulder, palm forward, then bring the palm to the mouth, lick it with the tongue, and return it to first position. (*Omaha* I.) "Showing blood on the paw."

Other remarks upon the signs for *bear* are made on pages 293 and 345.

BRAVE.

Close the fists, place the left near the breast, and move the right over the left toward the left side. (*Wied.*) A motion something like this, which I do not now distinctly recall—a short of wrenching motion with the fists in front of the chest—I have seen used for *strong.* If *Wied's* sign-maker's hand first struck the region over the heart (as he may have done) he would then have indicated a "strong heart," which is the equivalent for *brave.* (*Matthews.*) This sign is used by the Sioux at the present day to denote *small.* (*McChesney.*) I have seen a similar sign repeatedly, the only variation being that the right fist is passed over and downward, in front of the left, instead of toward the left side. (*Hoffman.*) Fig. 241.

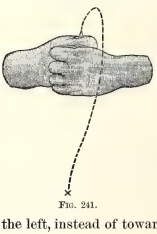

FIG. 241.

Clinch the right fist, and place it to the breast. (*Absaroka* I; *Shoshoni and Banak* I.)

Both hands fists, backs outward, obliquely upward, near together, right inside of left, are moved forward from in front of the chest, two or three times and back again to original position and then the right-hand fist is thrown with some force over the left on a curve. *Endurance* is expressed by this sign, and it is connected with the sun-dance trials of the young man in testing his bravery and powers of endurance before admission to the ranks of the warriors. (*Dakota* I.)

Push the two fists forward about a foot, at the height of the breast, the right about two inches behind the left, palms inward. (*Dakota* IV.) "The hands push all before them."

Hold the left arm in front as if supporting a shield, and the right drawn back as if grasping a weapon. Close the fists, lower the head, moving it a little forward (with a "lunge") as well as the arms and fists. (*Omaha* I.) "I am brave."

Another: Index and thumb extended parallel, palm to left, the other fingers bent. Shake the open fingers several times at the person referred to, the forearm being held at an angle of about 20°. (*Omaha* I.) "You are very brave; you do not fear death when you see the danger."

Strike the breast gently with the palmar side of the right fist. (*Wyandot* I.)

Place the left clinched hand horizontally before the breast, palm toward the body, and at the same time strike forcibly downward in front of it with the right fist, as in Fig. 242. Sometimes the right fist is placed back of the left, then thrown over the latter toward the front and downward, as in Fig. 241 above. The same gesture has also been made by throwing the palmar side of the right fist edgewise downward in front of the knuckles of the left, as in Fig. 243. In each instance the left fist is jerked upward very perceptibly as the right one is thrust downward. (*Kaiowa* I; *Comanche* III; *Apache* II; *Wichita* II.)

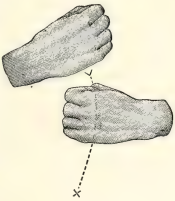

Fig. 242.

Strike the clinched fist forcibly toward the ground in front of and near the breast. (*Arikara* I.)

——— He is the bravest of all.

Make the sign for BRAVE and then the left forefinger, upright, back inward about twelve inches in front of left breast, right index similarly held near the right breast, move them at the same time outward or forward, obliquely to the left. (*Dakota* I.)

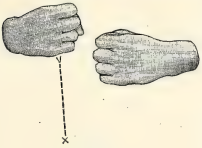

Fig. 243.

Raise right hand, fingers extended, palm downward (W 1), swing it around "over all," then point to the man, raise left fist (A 1, changed to left and palm inward) to a point in front of and near the body, close fingers of right hand and place the fist (A 2, palm inward) between left fist and body and then with violent movement throw it over left fist, as though breaking something, and stop at a point in front of and a little below left fist, and lastly point upward with right hand. (*Sahaptin* I.) "Of all here he is strongest."

The right fist, palm downward, is struck against the breast several times, and the index is then quickly elevated before the face, pointing upward. (*Apache* I.)

Move the fist, thumb to the head, across the forehead from right to left, and cast it toward the earth over the left shoulder. (*Apache* III.)

Deaf-mute natural signs:

Run forward with a bold expression of the countenance. (*Larson.*)

Not to run back but to run forward. (*Ziegler.*)

Deaf-mute sign:

Left hand held as if pressing a loaf against the chest. Make a motion with the right hand, palm upward as if cutting through the fingers of the left with a sawing motion. (*Wing.*)

Other remarks connected with the signs for *brave* appear on pages 352, 353, and 358, *supra.*

CHIEF.

The forefinger of the right hand extended, pass it perpendicularly downward, then turn it upward, and raise it in a right line as high as the head. (*Long.*) "Rising above others."

Raise the index finger of the right hand, holding it straight upward, then turn it in a circle and bring it straight down, a little toward the earth. (*Wied.*) The right hand is raised, and in position (J) describes a semicircle as in beginning the act of throwing. The arm is elevated perfectly erect aside of the head, the palm of the index and hand should be outward. There is an evident similarity in both execution and conception of this sign and *Wied's;* the little variation may be the result of different interpretation. The idea of superiority is most prominent in both. (*Boteler.*) "A prominent one before whom all succumb." The Arikaras understood this sign, and they afterwards used it in talking to me. (*Creel.*) *Wied's* air-picture reminds of the royal scepter with its sphere.

Raise the forefinger, pointed upwards, in a vertical direction, and then reverse both finger and motion; the greater the elevation the "bigger" the chief. (*Arapaho* I.)

Place the closed hand, with the index extended and pointing upward, near the right cheek, pass it upward as high as the head, then turn it forward and downward toward the ground, the movement terminating a little below the initial point. See Fig. 306 in TENDOY-HUERITO DIALOGUE, p. 487. (*Arapaho* II; *Cheyenne* V; *Ponka* II; *Shoshoni* I.)

(1) Sign for MAN, as follows: Right hand, palm inward, elevated to about the level of the breast, index carelessly pointing upward, suddenly pointed straight upward, and the whole hand moved a little forward, at the same time taking care to keep the back of the hand toward the person addressed; (2) middle, third, little finger, and thumb slightly closed

together, forefinger pointing forward and downward; (3) curved motion made forward, outward, and downward. (*Cheyenne* II.) "He who stands still and commands," as shown by similarity of signs to *sit here* or *stand here.*

Extend the index, remaining fingers closed, and raise it to the right side of the head and above it as far as the arm can reach. Have also seen the sign given by *Wyandot* I. (*Ojibwa* V.)

The extended forefinger of the right hand (J), of which the other fingers are closed, is raised to the right side of the head and above it as far as the arm can be extended, and then the hand is brought down in front of the body with the wrist bent, the back of hand in front and the extended forefinger pointing downward. (*Dakota* I.) "Raised above others."

Move the upright and extended right index, palm forward, from the shoulder upward as high as the top of the head, then forward six inches through a curve, and move it forward six inches, and then downward. its palm backward, to the height of the shoulder. An Arapaho sign, Above all others. He looks over or after us. (*Dakota* IV.)

Elevate the extended index before the shoulder, palm forward, pass it upward as high as the head, and forming a short curve to the front, then downward again slightly to the front to before the breast and about fifteen inches from it. (*Dakota* VI, VII, VIII; *Hidatsa* I; *Arikara* I.)

Right hand closed, forefinger pointing up, raise the hand from the waist in front of the body till it passes above the head. (*Omaha* I.)

Another: Bring the closed right hand, forefinger pointing up, on a level with the face; then bring the palm of the left hand with force against the right forefinger; next send up the right hand above the head, leaving the left as it is. (*Omaha* I.)

The right arm is extended by side of head, with the hand in position (J). The arm and hand then descend, the finger describing a semicircle with the arm as a radius. The sign stops with arm hanging at full length. (*Oto* I.) "The arm of authority before whom all must fall."

Both hands elevated to a position in front of and as high as the shoulders, palms facing, fingers and thumbs spread and slightly curved; the hands are then drawn outward a short distance towards their respective sides and gently elevated as high as the top of the head. (*Wyandot* I.) "One who is elevated by others."

Elevate the closed hand—index only extended and pointing upward—to the front of the right side of the face or neck or shoulder; pass it quickly upward, and when as high as the top of the head, direct it forward and downward again toward the ground. (*Kaiowa* I; *Comanche* III; *Apache* II; *Wichita* II.)

Close the right hand, index raised, extended, and placed before the breast, then move it forward from the mouth, pointing forward, until at arm's length. (*Ute* I.)

———, Head, of tribe.

Place the extended index, pointing upward, at some distance before the right shoulder, then place the left hand, with fingers and thumb extended and separated, just back of the index; then in passing the index upward as high as the head, draw the left hand downward a short distance, as in Fig. 244. Superior to others. (*Absaroka* I; *Arikara* I.)

FIG. 244.

Place both flat hands before the body, palms down, and pass them horizontally outward toward their respective sides, then make the sign for CHIEF. (*Arikara* I.) "Chief of the wide region and those upon it."

After pointing out the man, point to the ground, all fingers closed except first (J 1, pointing downward in stead of upward), then point upward with same hand (J 2), then move hand to a point in front of body, fingers extended, palm downward (W 1), and move around horizontally. (*Sahaptin* I.) "In this place he is head over all."

Fig. 245.

Grasp the forelock with the right hand, palm backward, pass the hand upward about six inches and hold it in that position a moment. (*Pai-Ute* I.) Fig 245.

Elevate the extended index vertically above and in front of the head, holding the left hand, forefinger pointing upward, from one to two feet below and underneath the right, the position of the left, either elevated or depressed, also denoting the relative position of the second individual to that of the chief. (*Apache* I.)

———, War. Head of a war party; Partisan.

First make the sign of the *pipe*; then open the thumb and index finger of the right hand, back of the hand outward, moving it forward and upward in a curve. (*Wied.*) For remarks upon this sign see page 384.

Place the right hand, index only extended and pointing forward and upward, before the right side of the breast nearly at arm's length, then place the left hand, palm forward with fingers spread and extended, midway between the breast and the right hand. (*Arapaho* II; *Cheyenne* V; *Ponka* II; *Pani* I.)

First make the sign for BATTLE, viz: Both hands (A 1) brought to the median line of the body on a level with the breast and close together; describe with both hands at the same time a series of circular movements of small circumference; and then add the sign for CHIEF. (*Dakota* I.) "First in battle."

——— of a band.

Point toward the left and front with the extended forefinger of the left hand, palm down; then place the extended index about twelve inches behind the left hand, pointing in the same direction. (*Arapaho* II; *Cheyenne* V; *Ponka* II; *Pani* I.)

Place the extended index at some distance before the right shoulder, pointing forward and slightly upward, then place the left hand with fingers and thumb extended and separated over the index, and while pushing the index to the front, draw the left hand backward toward body and to the left. Ahead of others. (*Absaroka* I; *Arikara* I.) Fig. 246.

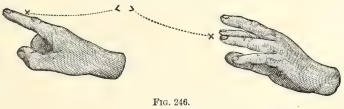

FIG. 246.

Point the extended index forward and upward before the chest, then place the spread fingers of the left hand around the index, but at a short distance behind it, all pointing the same direction. Ahead of the remainder. (*Arikara* I.)

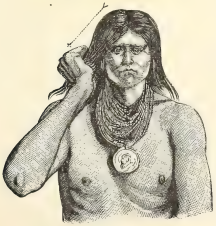

FIG. 247.

Grasp the forelock with the right hand, palm backward, and pretend to lay the hair down over the right side of the head by passing the hand in that direction. (*Pai-Ute* I.) Fig. 247.

The French deaf-mute sign for *order*, *command*, may be compared with several of the above signs. In it the index tip first touches the lower lip, then is raised above the head and brought down with violence. (*L'enseignment primaire des sourds-muets; par M. Pélissier. Paris*, 1856.)

Not only in Naples, but, according to De Jorio, in Italy generally the conception of *authority* in gesture is by pressing the right hand on the flank, accompanied by an erect and squared posture of the bust with the head slightly inclined to the right. The idea of *substance* is conveyed.

———, Warrior lower than actual, but distinguished for bravery.

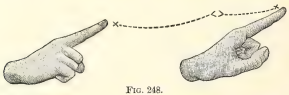

Fig. 248.

Place the left forefinger, pointing toward the left and front, before the left side of the chest, then place the extended index near (or against) the forefinger, and, while passing the latter outward toward the left, draw the index toward the right. (*Absaroka* I; *Arikara* I; *Shoshoni* I.) Fig. 248.

DEAD, DEATH.

Throw the forefinger from the perpendicular into a horizontal position toward the earth, with the back downward. (*Long.*)

Hold the left hand flat over the face, back outward, and pass with the similarly held right hand below the former, gently striking or touching it. (*Wied.*) The sign given (*Oto and Missouri* I) has no similarity in execution or conception with *Wied's*. (*Boteler.*) This sign may convey the idea of *under* or *burial*, quite differently executed from most others reported. Dr. McChesney conjectures this sign to be that of wonder or surprise at hearing of a death, but not a distinct sign for the latter.

The finger of the right hand passed to the left hand and then cast down. (*Macgowan.*)

Hold the left hand slightly arched, palm down, fingers pointing toward the right about fifteen inches before the breast, then place the extended index nearer the breast, pointing toward the left, pass it quickly forward underneath the left hand and in an upward curve to termination. (*Arapaho* I; *Cheyenne* V; *Ponka* II; *Pani* I.)

Place the palm of the hand at a short distance from the side of the head, then withdrawing it gently in an oblique downward direction and inclining the head and upper part of the body in the same direction. (*Ojibwa* II.) See page 353 for remarks upon this sign.

Hold both hands open, with palms over ears, extend fingers back on brain, close eyes, and incline body a little forward and to right or left very low, and remain motionless a short time, pronouncing the word *Ke-nee-boo* slowly. (*Ojibwa* IV.)

Left hand flattened and held back upward, thumb inward in front of and a few inches from the breast. Right hand slightly clasped, forefinger more extended than the others, and passed suddenly under the left hand, the latter being at the same time gently moved toward the breast. (*Cheyenne* II.) "Gone under."

Both hands horizontal in front of body, backs outward, index of each hand alone extended, the right index is passed under the left with a downward, outward and then upward and inward curved motion at the same time that the left is moved inward toward the body two or three inches, the movements being ended on the same level as begun. "Upset, keeled over." For *many deaths* repeat the sign many times. The sign of (*Cheyenne* II) expresses "gone under," but is not used in the sense of *death, dead*, but *going under a cover*, as entering a lodge, under a table, &c. (*Dakota* I.)

Make the sign for ALIVE, viz.: The right hand, back upward, is to be at the height of the elbow and forward, the index extended and pointing forward, the other fingers closed, thumb against middle finger; then, while rotating the hand outward, move it to a position about four inches in front of the face, the back looking forward and the index pointing upward; then the sign for NO. (*Dakota* IV.)

Another: Hold the left hand pointing toward the right, palm obliquely downward and backward, about a foot in front of the lower part of the chest, and pass the right hand pointing toward the left, palm downward, from behind forward underneath it. Or from an upright position in front of the face, back forward, index extended and other fingers closed, carry the right hand downward and forward underneath the left and about four inches beyond it, gradually turning the right hand until its back is upward and its index points toward the left. An Arapaho sign. Gone under or buried. (*Dakota* IV.)

Hold the left hand slightly bent with the palm down, before the breast, then pass the extended right hand, pointing toward the left, forward under and beyond the left. (*Dakota* VI, VII.)

Hold the right hand, flat, palm downward, before the body; then throw it over on its back to the right, making a curve of about fifteen inches. (*Dakota* VI; *Hidatsa* I; *Arikara* I.) The gesture of reversal in this and other instances may be compared with picture-writings in which the reversed character for the name or totem of a person signifies his death. One of these is given in Fig. 249, taken from Schoolcraft's *Hist. Am. Tribes*, I, p. 356, showing the cedar burial post or *adjedatig* of Wabojeeg, an Ojibwa war chief, who died on Lake Superior about 1793. He

belonged to the deer clan of his tribe and the animal is drawn reversed on the post.

Extend right hand, palm down, hand curved. Turn the palm up in moving the hand down towards the earth. (*Omaha* I.)

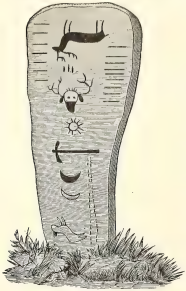

Fig. 249.

The countenance is brought to a sleeping composure with the eyes closed. This countenance being gradually assumed, the head next falls toward either shoulder. The arms having been closed and crossed upon the chest with the hands in type positions (B B) are relaxed and drop simultaneously towards the ground, with the fall of the head. This attitude is maintained some seconds. (*Oto and Missouri* I.) "The bodily appearance at death."

Place the open hand, back upward, fingers a little drawn together, at the height of the breast, pointing forward; then move it slowly forward and downward, turning it over at the same time. (*Iroquois* I.) "To express 'gone into the earth, face upward.'"

The flat right hand is waved outward and downward toward the same side, the head being inclined in the same direction at the time, with eyes closed. (*Wyandot* I.)

Hold the left hand loosely extended about fifteen inches in front of the breast, palm down, then pass the index, pointing to the left, in a short curve downward, forward, and upward beneath the left palm. (*Kaiowa* I; *Comanche* III; *Apache* II; *Wichita* II.)

Bring the left hand to the left breast, hand half clinched (H), then bring the right hand to the left with the thumb and forefinger in such a position as if you were going to take a bit of string from the fingers of the left hand, and pull the right hand off in a horizontal line as if you were stretching a string out, extend the hand to the full length of the arm from you and let the index finger point outward at the conclusion of the sign. (*Comanche* I.) "Soul going to happy hunting-grounds."

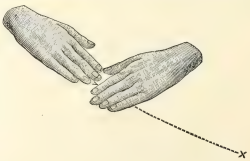

Fig. 250.

The left hand is held slightly arched, palm down, nearly at arm's length before the breast; the right extended, flat, palm down, and pointing forward, is pushed from the top of the breast, straightforward, underneath, and beyond the left. (*Shoshoni and Banak* I.) Fig. 250.

Close both eyes, and after a moment throw the palm of the right hand from the face downward and outward toward the right side, the head being dropped in the same direction. (*Ute* I.)

Touch the breast with the extended and joined fingers of the right hand, then throw the hand, palm to the left, outward toward the right, leaning the head in that direction at the same time. (*Apache* I.)

Close the eyes with the tips of the index and second finger, respectively, then both hands are placed side by side, horizontally, palms downward, fingers extended and united; hands separated by slow horizontal movement to right and left. (*Kutchin* I.)

Palm of hand upward, then a wave-like motion toward the ground. (*Zuñi* I.)

Deaf-mute natural signs:

Place the hand upon the cheek, and shut the eyes, and move the hand downward toward the ground. (*Ballard.*)

Let your head lie on the open hand with eyes shut. (*Cross.*)

Use the right shut hand as if to draw a screw down to fasten the lid to the coffin and keep the eyes upon the hand. (*Hasenstab.*)

Move the head toward the shoulder and then close the eyes. (*Larson.*)

Deaf mute signs:

The French deaf-mute conception is that of gently falling or sinking, the right index falling from the height of the right shoulder upon the left forefinger, toward which the head is inclined.

The deaf-mute sign commonly used in the United States is the same as *Dakota* VI; *Hidatsa* I; *Arikara* I; above. Italians with obvious conception, make the sign of the cross.

——— To Die.

Right hand, forefinger extended, side up, forming with the thumb a U; the other fingers slightly curved, touching each other, the little finger having its side toward the ground. Move the hand right and left then forward, several times; then turn it over suddenly, letting it fall toward the earth. (*Ojibwa* V; *Omaha* I.) "An animal wounded, but staggering a little before it falls and dies."

——— Dying.

Hold the left hand as in *dead*; pass the index in the same manner underneath the left, but in a slow, gentle, interrupted movement. (*Kaiowa* I; *Comanche* III; *Apache* II; *Wichita* II.) "Step by step; inch by inch." Fig. 251.

Fig. 251.

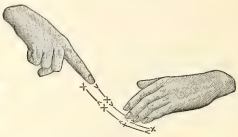

Fig. 252.

——— Nearly, but recovers.

Hold the left hand as in *dead*; pass the index with a slow, easy, interrupted movement downward, under the left palm, as in *dying*, but before passing from under the palm on the opposite side return the index in the same manner to point of starting; then elevate it. (*Kaiowa* I; *Comanche* III; *Apache* II; *Wichita* II.) Fig. 252.

Other remarks upon the signs for *dead* are given on page 353.

Good.

The hand held horizontally, back upward, describes with the arm a horizontal curve outward. (*Long.*) This is like the Eurasian motion of benediction, but may more suggestively be compared with several of the signs for *yes*, and in opposition to several of those for *bad* and *no*, showing the idea of acceptance or selection of objects presented, instead of their rejection.

Place the right hand horizontally in front of the breast and move it forward. (*Wied.*) This description is essentially the same as the one I furnished. (*Mandan and Hidatsa* I.) I stated, however, that the hand was moved outward (*i. e.*, to the right). I do not remember seeing it moved directly forward. In making the motion as I have described it the hand would have to go both outward and forward. (*Matthews.*) The left arm is elevated and the hand held in position (W). The arm and hand are thus extended from the body on a level with the chest; the elbow being slightly bent, the arm resembles a bent bow. The right arm is bent and the right hand, in position (W), sweeps smoothly over the left arm from the biceps muscle over the ends of the fingers. This sign and *Wied's* are noticeably similar. The difference is, the *Oto* sign

uses the left arm in conjunction and both *more to the left.* The conception is of something that easily passes; smoothness, evenness, etc., in both. (*Boteler.*)

Wave the hand from the mouth, extending the thumb from the index and closing the other three fingers. This sign also means *I know.* (*Burton.*)

(1) Right-hand fingers pointing to the left placed on a level with mouth, thumb inward; (2) suddenly moved with curve outward so as to present palm to person addressed. (*Cheyenne* II.)

Pass the open right hand, palm downward, from the heart, twenty-four inches horizontally forward and to the right through an arc of about 90°. (*Dakota* IV.) "Heart easy or smooth."

Another: Gently strike the chest two or three times over the heart with the radial side of the right hand, the fingers partly flexed and pointing downward. An Arapaho sign. (*Dakota* IV.)

Place the flat right hand, palm down, thumb touching the breast, then move it forward and slightly upward and to the right. (*Arapaho* II; *Cheyenne* V; *Ojibwa* V; *Dakota* VI, VII, VIII; *Kaiowa* I; *Comanche* III; *Apache* II; *Wichita* II.)

Pass the flat hand, palm down, from the breast forward and in a slight curve to the right. (*Dakota* VI; *Hidatsa* I; *Arikara* I.)

The extended right hand, palm downward, thumb backward, fingers pointing to the left, is held nearly or quite in contact with the body about on a level with the stomach; it is then carried outward to the right a foot or two with a rapid sweep, in which the forearm is moved but not necessarily the humerus. (*Mandan and Hidatsa* I.)

Move right hand, palm down, over the blanket, right and left, several times. (*Omaha* I.)

Another: Hit the blanket, first on the right, then on the left, palm down, several times. (*Omaha* I.)

Another: Point at the object with the right forefinger, shaking it a little up and down, the other fingers being closed. (*Omaha* I.)

Another: Same as preceding, but with the hand open, the thumb crooked under and touching the forefinger; hand held at an angle of 45° while shaking a little back and forth. (*Omaha* I.)

Another: Hold the closed hands together, thumbs up; separate by turning the wrists down, and move the fists a little apart; then reverse movements till back to first position. (*Omaha* I.)

Another: Hold the left hand with back toward the ground, fingers and thumb apart, and curved; hold the right hand opposite it, palm

down, hands about six inches apart; shake the hands held thus, up and down, keeping them the same distance apart. (*Omaha* I.)

Another: Hold the hands with the palms in, thumbs up, move hands right and left, keeping them about six inches apart. (*Omaha* I.)

Another: Look at the right hand, first on the back, then on the palm, then on the back again. (*Omaha* I.)

The flat right hand, palm down, is moved forward and upward, starting at a point about twelve inches before the breast. (*Wyandot* I.)

Hold the flat right hand forward and slightly outward from the shoulder, palm either upward or downward, and pass it edgewise horizontally to the right and left. This sign was made when no personality was involved. The same gesturer when claiming for himself the character of goodness made the following: Rapidly pat the breast with the flat right hand. (*Pima and Papago* I.)

Throw right hand from front to side, fingers extended and palm down, forearm horizontal. (*Sahaptin* I.)

Make an inclination of the body forward, moving at the same time both hands forward from the breast, open, with the palm upward, and gradually lowering them. This is also used for *glad, pleased.* (*Iroquois* I.)

Bring both hands to the front, arms extended, palms outward; elevate them upward and slightly forward; the face meanwhile expressive of wonder. (*Comanche* I.)

Bring the hand opposite the breast, a little below, hand extended, palm downward (W), and let it move off in a horizontal direction. If it be very good, this may be repeated. If comparatively good, repeat it more violently. (*Comanche* I.)

Hold the right hand palm down, pointing to the left, and placed horizontally before the breast, then raise it several times slightly. Good and glad. (*Kutchin* I.)

Deaf-mute natural signs:
Smack the lips. (*Ballard.*)

Close the hand while the thumb is up, and nod the head and smile as if to approve of something good. (*Hasenstab.*)

Point the forefinger to the mouth and move the lips with a pleased look as if tasting sweet fruit. (*Larson.*)

Use the sign for *handsome* by drawing the outstretched palm of the right hand down over the right cheek; at the same time nod the head as if to say "yes." (*Ziegler.*)

Deaf-mute signs:

Some of the Indian signs appear to be connected with a pleasant taste in the mouth, as is the sign of the French and American deaf-mutes, waving thence the hand, either with or without touching the lips, back upward, with fingers straight and joined, in a forward and downward curve. They make nearly the same gesture with hand sidewise for general assent: "Very well!"

The conventional sign for *good*, given in the illustration to the report of the Ohio Institution for the education of the deaf and dumb, is: The right hand raised forward and closed, except the thumb, which is extended upward, held vertically, its nail being toward the body; this is in opposition to the sign for *bad* in the same illustration, the one being merely the exhibition of the thumb toward and the other of the little finger away from the body. They are English signs, the traditional conception being acceptance and rejection respectively.

Italian signs:

The fingers gathered on the mouth, kissed and stretched out and spread, intimate a dainty morsel. The open hand stretched out horizontally, and gently shaken, intimates that a thing is so-so, not good and not bad. (*Butler.*) Compare also the Neapolitan sign given by De Jorio, see Fig. 62, p. 286, *supra*. Cardinal Wiseman gives as the Italian sign for *good* "the hand thrown upwards and the head back with a prolonged ah!" *Loc. cit.*, p. 543.

——— Heart is.

Strike with right hand on the heart and make the sign for GOOD from the heart outward. (*Cheyenne* II.)

Touch the left breast over the heart two or three times with the ends of the fingers of the right hand; then make the sign for GOOD. (*Dakota* IV.)

Place the fingers of the flat right hand over the breast, then make the sign for GOOD. (*Dakota* VII.)

Move hand to position in front of breast, fingers extended, palm downward (W), then with quick movement throw hand forward and to the side to a point 12 or 15 inches from body, hand same as in first position. (*Sahaptin* I.)

For further remarks on the signs for *good*, see page 286.

HABITATION, including HOUSE, LODGE, TIPI, WIGWAM.

——— HOUSE.

The hand half open and the forefinger extended and separated; then raise the hand upward and give it a half turn, as if screwing something. (*Dunbar.*)

Cross the ends of the extended fingers of the two hands, the hands to be nearly at right angle, radial side up, palms inward and backward, thumbs in palms. Represents the logs at the end of a log house. (*Creel; Dakota* IV.)

Partly fold the hands, the fingers extended in imitation of the corner of an ordinary log house. (*Arapaho* I.)

Both hands outspread near each other, elevated to front of face; suddenly separated, turned at right angles, palms facing; brought down at right angles, suddenly stopped. Representing square form of a house. (*Cheyenne* II.)

The fingers of both hands extended and slightly separated, then those of the right are placed into the several spaces between those of the left, the tips extending to about the first joints. (*Absaroka* I.) "From the arrangement of the logs in a log building."

Both hands extended, fingers spread, place those of the right into the spaces between those of the left, then move the hands in this position a short distance upward. (*Wyandot* I.) "Arrangement of logs and elevation."

Both hands are held edgewise before the body, palms facing, spread the fingers, and place those of one hand into the spaces between those of the other, so that the tips of each protrude about an inch beyond. (*Hidatsa* I; *Kaiowa* I; *Arikara* I; *Comanche* III; *Apache* II; *Wichita* II.) "The arrangement of logs in a frontier house." Fig. 253. In connection with this sign compare the pictograph, Fig. 204, page 379, *supra*. In ordinary conversation the sign for *white man's house* is often dropped, using instead the generic term employed for *lodge*, and this in turn is often abbreviated, as by the Kaiowas, Comanches, Wichitas, and others, by merely placing the tips of the extended forefingers together, leaving the other fingers and thumbs closed, with the wrists about three or four inches apart.

Fig. 253.

Both hands held pointing forward, edges down, fingers extended and slightly separated, then place the fingers of one hand into the spaces

between the fingers of the other, allowing the tips of the fingers of either hand to protrude as far as the first joint, or near it. (*Shoshoni and Banak* I.) "From the appearance of a corner of a log house—protruding and alternate layers of logs."

Fingers of both hands interlaced at right angles several times; then the sign for LODGE. (*Kutchin* I.)

Deaf-mute natural signs:

Draw the outlines of a house in the air with hands tip to tip at a right angle. (*Ballard.*)

Put the open hands together toward the face, forming a right angle with the arms. (*Larson.*)

———, Stone; Fort.

Strike the back of the right fist against the palm of the left hand, the left palm backward, the fist upright ("idea of resistance or strength"); then with both hands opened, relaxed, horizontal, and palms backward, place the ends of the right fingers behind and against the ends of the left; then separate them, and moving them backward, each through a semicircle, bring their bases together. The latter sign is also that of the Arapahos for *house.* An inclosure. (*Dakota* IV.) The first part of this sign is that for *stone.*

——— LODGE, TIPI, WIGWAM.

The two hands are reared together in the form of the roof of a house, the ends of the fingers upward. (*Long.*)

Place the opened thumb and forefinger of each hand opposite each other, as if to make a circle, but leaving between them a small interval; afterward move them from above downward simultaneously (which is the sign for *village*); then elevate the finger to indicate the number—one. (*Wied.*) Probably he refers to an earthen lodge. I think that the sign I have given you is nearly the same with all the Upper Missouri Indians. (*Matthews.*)

Place the fingers of both hands ridge-fashion before the breast. (*Burton.*)

Indicate outlines (an inverted V, thus Λ), with the forefingers touching or crossed at the tips, the other fingers closed. (*Creel; Arapaho* I.)

Both hands open, fingers upward, tips touching, brought downward, and at same time separated to describe outline of a cone, suddenly stopped. (*Cheyenne* II.)

Both hands approximated, held forward horizontally, fingers joined and slightly arched, backs upward, withdraw them in a sideward and downward direction, each hand moving to its corresponding side, thus

combinedly describing a hemisphere. Carry up the right and, with its index pointing downward indicate a spiral line rising upward from the center of the previously formed arch. (*Ojibwa* V.) "From the dome-shaped form of the wigwam, and the smoke rising from the opening in the roof."

Both hands flat and extended, placing the tips of the fingers of one against those of the other, leaving the palms or wrists about four inches apart. (*Absaroka* I; *Wyandot* I; *Shoshoni and Banak* I.) "From its exterior outline."

Both hands carried to the front of the breast and placed V-shaped, inverted, thus Λ, with the palms looking toward each other, edge of fingers outward, thumbs inward. (*Dakota* I.) "From the outline of the tipi."

With the hands nearly upright, palms inward, cross the ends of the extended forefingers, the right one either in front or behind the left, or lay the ends together; resting the ends of the thumbs together side by side, the other fingers to be nearly closed, and resting against each other, palms inward. Represents the tipi poles and the profile of the tipi. (*Dakota* IV.)

FIG. 254.

Place the tips of the fingers of both hands together in front of the breast, with the wrists some distance apart. (*Dakota* V.) Fig. 254.

Fingers of both hands extended and separated; then interlace them so that the tips of the fingers of one hand protrude beyond the backs of those of the opposing one; hold the hands in front of the breast, pointing upward, leaving the wrists about six inches apart. (*Dakota* VII, VIII; *Hidatsa* I; *Ponka* II; *Arikara* I; *Pani* I.)

The extended hands, with finger tips upward and touching, the palms facing one another, and the wrists about two inches apart, are held before the chest. (*Mandan and Hidatsa* I.)

Place the tip of the index against the tip of the forefinger of the left hand, the remaining fingers and thumbs closed, before the chest, leaving the wrists about six inches apart. (*Kaiowa* I; *Comanche* III; *Apache* II; *Wichita* II.) "Outline of lodge." This is an abbreviated sign, and care must be taken to distinguish it from *to meet*, in which the fingers are brought from their respective sides instead of upward to form the gesture.

Another: Place the tips of the fingers of the flat extended hands together before the breast, leaving the wrists about six inches apart. (*Kaiowa* I; *Comanche* III; *Apache* II; *Wichita* II.)

Another: Both hands flat and extended, fingers slightly separated; then place the fingers of the right hand between the fingers of the left as far as the second joints, so that the fingers of one hand protrude about an inch beyond those of the other; the wrists must be held about six inches apart. (*Kaiowa* I; *Comanche* III; *Apache* II; *Wichita* II.) "Outline of Indian lodge and crossing of tent poles above the covering." Fig. 255.

Fig. 255.

Fig. 256 represents a Sahaptin sign given to the writer by a gentleman long familiar with the northwestern tribes of Indians. The conception is the same union of the lodge poles at the top, shown in several other signs, differently executed.

Fig. 256.

Place the tips of the spread fingers of both hands against one another pointing upward before the body, leaving a space of from four to six inches between the wrists. Fig. 257. The fingers are sometimes bent so as to more nearly represent the outline of a house and roof. Fig. 258. This, however, is accidental. (*Pai-Ute* I.) "Represents the boughs and branches used in the construction of a Pai-Ute 'wik-i-up.'"

Fig. 257.

Place the tips of the two flat hands together before the body, leaving a space of about six inches between the wrists. (*Ute* I.) "Outline of the shape of the lodge."

Fig. 258.

Left hand and right hand put together in shape of sloping shelter (*Kutchin* I.) Fig. 259.

Fig. 259.

——— Great Council House.

Place both flat and extended hands in front of the shoulders, pointing forward, palms facing; then pass them straight upward and slightly inward near the termination of the gesture. This appears to combine the gestures for *much*, *large*, and *lodge*. (*Arikara* I.)

———, Coming or going out of a.

Same as the sign for *entering a lodge*, only the fingers of the right hand point obliquely upward after passing under the left hand. (*Dakota* I.) "Coming out from under cover."

Hold the open left hand a foot or eighteen inches in front of the breast, palm downward or backward, fingers pointing toward the right

and pass the right, back upward, with index extended, or all of the fingers extended, and pointing forward, about eighteen inches forward underneath the left through an arc from near the mouth. Some at the same time move the left hand toward the breast. (*Dakota* IV.)

———, Entering a.

The left hand is held with the back upward, and the right hand also with the back up is passed in a curvilinear direction down under the other, so as to rub against its palm, then up on the other side of it. The left hand here represents the low door of the skin lodge and the right the man stooping down to pass in. (*Long.*)

Pass the flat right hand in short curves under the left, which is held a short distance forward. (*Wied.*) I have described the same sign. It is not necessary to pass the hand more than once. By saying curves, he seems to imply many passes. If the hand is passed more than once it means repetition of the act. (*Mathews; McChesney.*) The conception is of the stooping to pass through the low entrance, which is often covered by a flap of skin, sometimes stretched on a frame, and which must be shoved aside, and the subsequent rising when the entrance has been accomplished. A distinction is reported by a correspondent as follows: "If the intention is to speak of a person entering the gesturer's own lodge, the right hand is passed under the left and toward the body, near which the left hand is held; if of a person entering the lodge of another, the left hand is held further from the body and the right is passed under it and outward. In both cases both hands are slightly curved and compressed." As no such distinction is reported by others it may be an individual invention or peculiarity.

A gliding movement of the extended hand, fingers joined, backs up, downward, then ascending, indicative of the stooping and resumption of the upright position in entering the same. (*Arapaho* I.)

(1) Sign for LODGE, the left hand being still in position used in making sign for LODGE; (2) forefinger and thumb of right hand brought to a point and thrust through the outline of an imaginary lodge represented by the left hand. (*Cheyenne* II.)

First make the sign for LODGE, then place the left hand, horizontal and slightly arched, before the body, and pass the right hand with extended index underneath the left—forward and slightly upward beyond it. (*Absaroka* I; *Dakota* V; *Shoshoni and Banak* I; *Wyandot* I.)

Left hand (W), ends of fingers toward the right, stationary in front of the left breast; pass the right hand directly and quickly out from the breast under the stationary left hand, ending with the extended fingers of the right hand pointing outward and slightly downward, joined, palm downward flat, horizontal (W). (*Dakota* I.) "Gone under; covered."

Hold the open left hand a foot or eighteen inches in front of the breast, palm downward or backward, fingers pointing toward the right, and pass the right hand, palm upward, fingers bent sidewise and pointing backward, from before backward underneath it, through a curve until near the mouth. Some at the same time move the left hand a little forward. (*Dakota* IV.)

The left hand, palm downward, finger-tips forward, either quite extended or with the fingers slightly bent, is held before the body. Then the right hand nearly or quite extended, palm downward, finger-tips near the left thumb, and pointing toward it, is passed transversely under the left hand and one to four inches below it. The fingers of the right hand point slightly upward when the motion is completed. This sign usually, but not invariably, refers to entering a house. (*Mandan and Hidatsa* I.)

Place the slightly curved left hand, palm down, before the breast, pointing to the right, then pass the flat right hand, palm down, in a short curve forward, under and upward beyond the left. (*Ute* I.) "Evidently from the manner in which a person is obliged to stoop in entering an ordinary Indian lodge."

HORSE.

The right hand with the edge downward, the fingers joined, the thumb recumbent, extended forward. (*Dunbar.*)

Place the index and middle finger of the right hand astraddle the index finger of the left. [In the original the expression "third" finger is used, but it is ascertained in another connection that the author counts the thumb as the first finger and always means what is generally styled middle finger when he says third. The alteration is made to prevent confusion.] (*Wied.*) I have described this sign in words to the same effect. (*Matthews.*) The right arm is raised, and the hand, opened edgewise, with fingers parallel and approximated, is drawn from left to right before the body at the supposed height of the animal. There is no conceivable identity in the execution of this sign and *Wied's*, but his sign for *horse* is nearly identical with the sign for *ride a horse* among the Otos. (*Boteler.*) This sign is still used by the Cheyennes. (*Dodge.*)

A hand passed across the forehead. (*Macgowan.*)

Left-hand thumb and forefinger straightened out, held to the level of and in front of the breast; right-hand forefinger separated from the middle finger and thrown across the left hand to imitate the act of bestriding. They appear to have no other conception of a horse, and have thus indicated that they have known it only as an animal to be ridden. (*Creel; Cheyenne* II.)

Draw the right hand from left to right across the body about the heart, the fingers all closed except the index. This is abbreviated by making a circular sweep of the right open hand from about the left elbow to the front of the body, probably indicating the mane. A Pani sign. (*Cheyenne* IV.)

Place the first two fingers of the right hand, thumb extended (N 1), downward, astraddle the first two joined and straight fingers of the left hand (T 1), sidewise to the right. Many Sioux Indians use only the forefinger straightened. (*Dakota* I.) "Horse mounted."

The first and second fingers extended and separated, remaining fingers and thumb closed; left forefinger extended, horizontal, remaining fingers and thumb closed; place the right hand fingers astride of the forefinger of the left, and both hands jerked together, up and down, to represent the motion of a horse. (*Dakota* III.)

The two hands being clinched and near together, palms downward, thumbs against the forefingers, throw them, each alternately, forward and backward about a foot, through an ellipsis two or three times, from about six inches in front of the chest, to imitate the galloping of a horse, or the hands may be held forward and not moved. (*Dakota* IV.)

Place the extended and separated index and second fingers of the right hand astraddle of the extended forefinger of the left. Fig. 260. Sometimes all the fingers of the left hand are extended in making this sign, as in Fig. 261, though this may be the result of carelessness. (*Dakota* VI, VII, VIII; *Hidatsa* I; *Ponka* II; *Arikara* I; *Pani* I.)

Fig. 260.

Fig. 261.

The left hand is placed before the chest, back upward in the position of an index-hand pointing forward; then the first and second fingers of the right hand only being extended, separated and pointing downward, are set one on each side of the left forefinger, the interdigital space resting on the forefinger. The palm faces downward and backward. This represents a rider astride of a horse. (*Mandan and Hidatsa* I.)

Close hands, except forefingers, which are curved downward; move them forward in rotation, imitating the fore feet of the horse, and make puffing sound of "Uh, uh"! (*Omaha* I.) "This sign represents the horse racing off to a safe distance, and puffing as he tosses his head."

The arm is flexed and with the hand extended is brought on a level with the mouth. The hand then assumes the position (W 1), modified by being held edges up and down, palm toward the chest, instead of

flat. The arm and hand being held thus about the usual height of a horse are made to pass in an undulating manner across the face or body about one foot distant from contact. The latter movements are to resemble the animal's gait. (*Oto* I.) "Height of animal and movement of same."

The index and second fingers of the right hand are placed astraddle the extended forefinger of the left. (*Wyandot* I.)

Place the flat right hand, thumb down, edgewise before the right side of the shoulder, pointing toward the right. (*Kaiowa* I; *Comanche* III; *Apache* II; *Wichita* II.) Fig. 262.

Fig. 263.

Fig. 262.

Another: Hold the right hand flat, extended, with fingers joined, the thumb extended upward, then pass the hand at arm's length before the face from left to right. This is said by the authorities cited below to be also the Caddo sign, and that the other tribes mentioned originally obtained it from that tribe. (*Kaiowa* I; *Comanche* I, III; *Apache* II; *Wichita* II.) Fig. 263.

Another: Place the extended and separated index and second fingers astraddle the extended and horizontal forefinger of the left hand. This sign is only used when communicating with uninstructed white men, or with other Indians whose sign for *horse* is specifically distinct. (*Kaiowa* I; *Comanche* III; *Apache* II; *Wichita* II.)

Place the extended index and second fingers of the right hand across the extended first two fingers of the left. Fig. 264. Size of the animal is indicated by passing the right hand, palm down, with fingers loosely separated, forward from the right side, at any height as the case may necessitate, after which the sign for HORSE may be made. (*Pima and Papago* I.)

Fig. 264.

Fig. 265.

Place the right hand, palm down, before the right side of the chest; place the tips of the second and third fingers against the ball of the thumb, allowing the index and little fingers to project to represent the ears. Fig. 265. Frequently the middle fingers extend equally with and against the thumb, forming the head of the animal, the ears always being represented by the two outer fingers, viz, the index and little finger. Fig. 266. (*Ute* I.) A similar sign is reported by Colonel Dodge as used by the Utes.

Fig. 266.

Elevate the right hand, extended, with fingers joined, outer edge toward the ground, in front of the body or right shoulder, and pointing

forward, resting the curved thumb against the palmar side of the index. This sign appears also to signify *animal* generically, being frequently employed as a preliminary sign when denoting other species. (*Apache* I.)

Deaf-mute natural signs:

Imitate the motion of the elbows of a man on horseback. (*Ballard.*)

Act in the manner of a driver, holding the lines in his hands and shouting to the horse. (*Cross.*)

Move the hands several times as if to hold the reins. (*Larson.*)

Deaf-mute signs:

The French deaf-mutes add to the straddling of the index the motion of a trot. American deaf-mutes indicate the ears by placing two fingers of each hand on each side of the head and moving them backward and forward. This is sometimes followed by straddling the left hand by the fore and middle fingers of the right.

———, A man on a.

Same sign as for HORSE, with the addition of erecting the thumb while making the gesture. (*Dodge.*)

———, Bay.

Make the sign for HORSE, and then rub the lower part of the cheek back and forth. (*Dakota* IV.)

———, Black.

Make the sign for HORSE, and then point to a black object or rub the back of the left hand with the palmar side of the fingers of the right. (*Dakota* IV.)

———, Bronco. An untamed horse.

Make the sign TO RIDE by placing the extended and separated index and second fingers of the right hand astraddle the extended forefinger of the left hand, then with both hands retained in their relative positions move them forward in high arches to show the bucking of the animal. (*Ute* I.)

———, Grazing of a.

Make the sign for HORSE, then lower the hand and pass it from side to side as if dipping it upon the surface. (*Ute* I.)

———, Packing a.

Hold the left hand, pointing forward, palm inward, a foot in front of the chest and lay the opened right hand, pointing forward, first obliquely along the right side of the upper edge of the left hand, then on top, and then obliquely along the left side. (*Dakota* IV.)

———, Racing, Fast horse.

The right arm is elevated and bent at right angle before the face; the hand, in position (S 1) modified by being horizontal, palm to the face,

is drawn across edgewise in front of the face. The hand is then closed and in position (B) approaches the mouth from which it is opened and closed successively forward several times, finally it is suddenly thrust out in position (W 1) back concave. (*Oto and Missouri* I.) "Is expressed in the (*Oto* I) sign for HORSE, then the motion for quick running."

——— Racing.

Extend the two forefingers and after placing them parallel near together in front of the chest, backs upward, push them rapidly forward about a foot. (*Dakota* IV.)

Place both hands, with the forefingers only extended and pointing forward side by side with the palms down, before the body; then push them alternately backward and forward, in imitation of the movement of horses who are running "neck and neck." (*Ute* I; *Apache* I, II.)

———, Saddling a.

Hold the left hand as in the sign for HORSE, *Packing a*, and lay the semiflexed right hand across its upper edge two or three times, the ends of the right fingers toward the left. (*Dakota* IV.)

FIG. 267.

Place the extended and separated fingers rapidly with a slapping sound astraddle the extended fore and second fingers of the left hand. The sound is produced by the palm of the right hand which comes in contact with the upper surface of the left. (*Ute* I.) Fig. 267.

———, Spotted; pied.

Make the sign for HORSE, then the sign for SPOTTED, see page 345. (*Dakota* IV.)

KILL, KILLING.

The hands are held with the edge upward, and the right hand strikes the other transversely, as in the act of chopping. This sign seems to be more particularly applicable to convey the idea of death produced by a blow of the tomahawk or war-club. (*Long.*)

Clinch the hand and strike from above downward. (*Wied.*) I do not remember this. I have given you the sign for killing with a stroke. (*Matthews.*) There is an evident similarity in conception and execution between the (*Oto and Missouri* I) sign and *Wied's*. (*Boteler.*) I have frequently seen this sign made by the Arikara, Gros Ventre, and Mandan Indians at Fort Berthold Agency. (*McChesney.*) This motion, which may be more clearly expressed as the downward thrust of a knife held in the clinched hand, is still used by many tribes for the general idea of "kill," and illustrates the antiquity of the knife as a weapon. *Wied* does not say whether the clinched hand is thrust downward with

the edge or the knuckles forward. The latter is now the almost universal usage among the same tribes from which he is supposed to have taken his list of signs, and indicates the thrust of a knife more decisively than if the fist were moved with the edge in advance. The actual employment of arrow, gun, or club in taking life, is, however, often specified by appropriate gesture.

Smite the sinister palm earthward with the dexter fist sharply, in sign of "going down"; or strike out with the dexter fist toward the ground, meaning to "shut down"; or pass the dexter under the left forefinger, meaning to "go under." (*Burton.*)

Right hand cast down. (*Macgowan.*)

Hold the right fist, palm down, knuckles forward, and make a thrust forward and downward. (*Arapaho* II; *Cheyenne* V; *Dakota* VI, VII, VIII; *Hidatsa* I; *Ponka* II; *Arikara* I; *Pani* I.) Fig. 268.

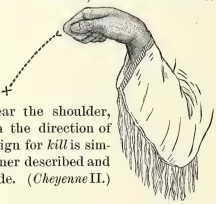

Fig. 268.

Right hand clinched, thumb lying along the finger tips, elevated to near the shoulder, strike downward and out vaguely in the direction of the object to be killed. The abstract sign for *kill* is simply to clinch the right hand in the manner described and strike it down and out from the right side. (*Cheyenne* II.)

Close the right hand, extending the forefinger alone; point toward the breast, then throw from you forward, bringing the hand toward the ground. (*Ojibwa* V; *Omaha* I.)

Both hands clinched, with the thumbs resting against the middle joints of the forefingers, hold the left transversely in front of and as high as the breast, then push the right, palm down, quickly over and down in front of the left. (*Absaroka* I; *Shoshoni and Banak* I.) "To force under—literally."

With the dexter fist carried to the front of the body at the right side, strike downward and outward several times, with back of hand upward, thumb toward the left, several times. (*Dakota* I.) "Strike down."

With the first and second joints of the fingers of the right hand bent, end of thumb against the middle of the index, palm downward, move the hand energetically forward and downward from a foot in front of the right breast. Striking with a stone—man's first weapon. (*Dakota* IV.)

The left hand, thumb up, back forward, not very rigidly extended, is held before the chest and struck in the palm with the outer edge of the

right hand. (*Mandan and Hidatsa* I.) "To kill with a blow; to deal the death blow." Fig. 269.

Right hand, fingers open but slightly curved, palm to the left; move downward, describing a curve. (*Omaha* I.)

Another: Similar to the last, but the index finger is extended, pointing in front of you, the other fingers but half open. (*Omaha* I.)

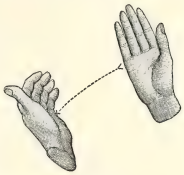

FIG. 269.

Place the flat right hand, palm down, at arm's length to the right, bring it quickly, horizontally, to the side of the head, then make the sign for DEAD. (*Ojibwa* V; *Wyandot* I.) "To strike with a club, dead."

Both hands, in positions (A A), with arms semiflexed toward the body, make the forward rotary sign with the clinched fists as in fighting; the right hand is then raised from the left outward, as clutching a knife with the blade pointing downward and inward toward the left fist; the left fist, being held *in situ*, is struck now by the right, edgewise as above described, and both suddenly fall together. (*Oto and Missouri* I.) "To strike down in battle with a knife. Indians seldom disagree or kill another in times of tribal peace."

Deaf-mute natural signs:

Strike a blow in the air with the clinched fist, and then incline the head to one side, and lower the open hand, palm upward. (*Ballard.*)

Strike the other hand with the fist, or point a gun, and, having shot, suddenly point to your breast with the finger, and hold your head sidewise on the hand. (*Cross.*)

Use the closed hand as if to strike, and then move back the head with the eyes shut and the mouth opened. (*Hasenstab.*)

Put the head down over the breast, and then move down the stretched hand along the neck. (*Larson.*)

Turkish sign:

Draw finger across the throat like cutting with a knife. (*Barnum.*)

——— In battle, To.

Make the sign for BATTLE by placing both hands at the height of the breast, palms facing, the left forward from the left shoulder, the right outward and forward from the right, fingers pointing up and spread, move them alternately toward and from one another; then strike the

back of the fingers of the right hand into the slightly curved palm of the left, immediately afterward throwing the right outward and downward toward the right. (*Ute* I.) "Killed and falling over."

——— You; I will kill you.

Direct the right hand toward the offender and spring the finger from the thumb, as in the act of sprinkling water. (*Long.*) The conception is perhaps "causing blood to flow," or, perhaps, "sputtering away the life," though there is a strong similarity to the motion used for the *discharge of a gun or arrow.*

Remarks and illustrations connected with the signs for *kill* appear on pages 377 and 378, *supra.*

———, to, with a knife.

Clinch the right hand and strike forcibly toward the ground before the breast from the height of the face. (*Ute* I.) "Appears to have originated when flint knives were still used."

No, not. (Compare Nothing.)

The hand held up before the face, with the palm outward and vibrated to and fro. (*Dunbar.*)

The right hand waved outward to the right with the thumb upward. (*Long; Creel.*)

Wave the right hand quickly by and in front of the face toward the right. (*Wied.*) Refusing to accept the idea or statement presented.

Move the hand from right to left, as if motioning away. This sign also means "I'll have nothing to do with you." (*Burton.*)

A deprecatory wave of the right hand from front to right, fingers extended and joined. (*Arapaho* I; *Cheyenne* V.)

Right-hand fingers extended together, side of hand in front of and facing the face, in front of the mouth and waved suddenly to the right. (*Cheyenne* II.)

Place the right hand extended before the body, fingers pointing upward, palm to the front, then throw the hand outward to the right, and slightly downward. (*Absaroka* I; *Hidatsa* I; *Arikara* I.) See Fig. 65, page 290.

The right hand, horizontal, palm toward the left, is pushed sidewise outward and toward the right from in front of the left breast. *No, none, I have none,* etc., are all expressed by this sign. Often these Indians for *no* will simply shake the head to the right and left. This sign, although it may have originally been introduced from the white

people's habit of shaking the head to express "no," has been in use among them for as long as the oldest people can remember, yet they do not use the variant to express "yes." (*Dakota* I.) "Dismissing the idea, etc."

Place the opened relaxed right hand, pointing toward the left, back forward, in front of the nose or as low as the breast, and throw it forward and outward about eighteen inches. Some at the same time turn the palm upward. Or make the sign at the height of the breast with both hands. Represents the shaking of the head. (*Dakota* IV.) The shaking of the head in negation is not so universal or "natural" as is popularly supposed, for the ancient Greeks, followed by the modern Turks and rustic Italians, threw the head back, instead of shaking it, for "no." Rabelais makes Pantagruel (Book 3) show by many quotations from the ancients how the shaking of the head was a frequent if not universal concomitant of oracular utterance—not connected with negation.

Hold the flat hand edgewise, pointing upward before the right side of the chest, then throw it outward and downward to the right. (*Dakota* VI, VII.) Fig. 270.

Fig. 270.

The hand, extended or slightly curved, is held in front of the body a little to the right of the median line; it is then carried with a rapid sweep a foot or more farther to the right. (*Mandan and Hidatsa* I.)

Place the hand as in *yes*, as follows: The hand open, palm downward, at the level of the breast, is moved forward with a quick downward motion from the wrist, imitating a bow of the head; then move it from side to side. (*Iroquois* I.) "A shake of the head."

Throw the flat right hand forward and outward to the right, palm to the front. (*Kaiowa* I; *Comanche* III; *Apache* II; *Wichita* II.)

Quick motion of open hand from the mouth forward, palm toward the mouth. (*Sahaptin* I.)

Place hand in front of body, fingers relaxed, palm toward body (Y 1), then with easy motion move to a point, say, a foot from the body, a little to right, fingers same, but palm upward. (*Sahaptin* I.) "We don't agree." To express *All gone*, use a similar motion with both hands. "Empty."

The hand waved outward with the thumb upward in a semi-curve. (*Comanche* I; *Wichita* I.)

Elevate the extended index and wave it quickly from side to side before the face. This is sometimes accompanied by shaking the head. (*Pai-Ute* I.) Fig. 271.

Fig. 271.

Extend the index, holding it vertically before the face, remaining fingers and thumb closed; pass the finger quickly from side to side a foot or so before the face. (*Apache* I.) This sign, as also that of (*Pai-Ute* I), is substantially the same as that with the same significance reported from Naples by De Jorio.

Another: The right hand, naturally relaxed, is thrown outward and forward toward the right. (*Apache* I.)

Wave extended index before the face from side to side. (*Apache* III.)

Another: Wave the index briskly before the right shoulder. This appears to be more common than the preceding. (*Apache* III.)

Right hand extended at the height of the eye, palm outward, then moved outward a little toward the right. (*Kutchin* I.)

Extend the palm of the right hand horizontally a foot from the waist, palm downward, then suddenly throw it half over from the body, as if tossing a chip from the back of the hand. (*Wichita* I.)

Deaf-mute natural signs:

Shake the head. (*Ballard.*)

Move both hands from each other, and, at the same time, shake the head. (*Hasenstab.*)

Deaf-mute signs:

French deaf-mutes wave the hand to the right and downward, with the first and second fingers joined and extended, the other fingers closed. This position of the fingers is that for the letter N in the finger alphabet, the initial for the word *non*. American deaf-mutes for emphatic negative wave the right hand before the face.

Turkish sign:

Throwing head back or elevating the chin and partly shutting the eyes. This also means, "Be silent." (*Barnum.*)

Japanese sign:

Move the right hand rapidly back and forth before the face. Communicated in a letter from Prof. E. S. Morse, late of the University of Tokio, Japan. The same correspondent mentions that the Admiralty

Islanders pass the forefinger across the face, striking the nose in passing, for negation. If the *no* is a doubtful one they *rub* the nose in passing, a gesture common elsewhere.

For further illustrations and comparisons see pp. 290, 298, 299, 304, 355, and 356, *supra*.

NONE, NOTHING; I HAVE NONE.

Motion of rubbing out. (*Macgowan.*)

Little or *nothing* is signified by passing one hand over the other. (*Creel; Ojibwa* I.)

May be signified by smartly brushing the right hand across the left from the wrist toward the fingers, both hands extended, palms toward each other and fingers joined. (*Arapaho* I.)

Is included in *gone, destroyed.* (*Dakota* I.)

Place the open left hand about a foot in front of the navel, pointing obliquely forward toward the right, palm obliquely upward and backward, and sweep the palm of the open right hand over it and about a foot forward and to the right through a curve. All bare. (*Dakota* IV.)

Another: Pass the ulnar side of the right index along the left index several times from tip to base, while pronating and supinating the latter. Some roll the right index over on its back as they move it along the left. The hands are to be in front of the navel, backs forward and outward, the left index straight and pointing forward toward the right, the right index straight and pointing forward and toward the left; the other fingers loosely closed. Represents a bush bare of limbs. (*Dakota* IV.)

Another: With the right hand pointing obliquely forward to the left, the left forward to the right, palms upward, move them alternately several times up and down, each time striking the ends of the fingers. Or, the left hand being in the above position, rub the right palm in a circle on the left two or three times, and then move it forward and to the right. Rubbed out; that is all; it is all gone. (*Dakota* IV.)

FIG. 272.

Pass the palm of the flat right hand over the left from the wrist toward and off of the tips of the fingers. (*Dakota* VI, VII, VIII; *Poñka* II; *Pani* I.) Fig. 272.

Brush the palm of the left hand from wrist to finger tips with the palm of the right. (*Wyandot* I.)

Another: Throw both hands outward toward their respective sides from the breast. (*Wyandot* I.)

Pass the flat right palm over the palm of the left hand from the wrist forward over the fingers. (*Kaiowa* I; *Comanche* III; *Apache* II; *Wichita* II.) "Wiped out."

Hold the left hand open, with the palm upward, at the height of the elbow and before the body; pass the right quickly over the left, palms touching, from the wrist toward the tips of the left, as if brushing off dust. (*Apache* I.)

Deaf-mute natural signs:

Place the hands near each other, palms downward, and move them over and apart, bringing the palms upward in opposite directions. (*Ballard.*)

Make a motion as in picking up something between the thumb and finger, carry it to the lips, blow it away, and show the open hand. (*Wing.*)

Australian sign:

Pannie (none or nothing). For instance, a native says *Bomako ingina* (give a tomahawk). I reply by shaking the hand, thumb, and all fingers, separated and loosely extended, palm down. (*Smyth, loc. cit.*) Fig. 273.

Fig. 273.

Turkish sign:

Blowing across open palm as though blowing off feathers; also means "Nothing, nothing left." (*Barnum.*)

———, I have none.

Deaf-mute natural signs:

Expressed by the signs for none, after pointing to one's self. (*Ballard.*)

Stretch the tongue and move it to and fro like a pendulum, then shake the head as if to say "no." (*Ziegler.*)

——— Left. Exhausted for the present.

Hold both hands naturally relaxed nearly at arm's length before the body, palms toward the face, move them alternately to and fro a few inches, allowing the fingers to strike those of the opposite hand each time as far as the second joint. (*Kaiowa* I; *Comanche* III; *Apache* II; *Wichita* II.) Cleaned out.

QUANTITY, LARGE; MANY; MUCH.

The flat of the right hand patting the back of the left hand, which is repeated in proportion to the greater or lesser quantity. (*Dunbar.*) Simple repetition.

The hands and ar as are passed in a curvilinear direction outward and downward, as if showing the form of a large globe; then the hands are closed and elevated, as if something was grasped in each hand and held up about as high as the face. (*Long; Creel.*)

Clutch at the air several times with both hands. The motion greatly resembles those of danseuses playing the castanets. (*Ojibwa* I.)

In the preceding signs the authorities have not distinguished between the ideas of "many" and "much." In the following there appears by the expressions of the authorities to be some distinction intended between a number of objects and a quantity in volume.

——— MANY.

A simultaneous movement of both hands, as if gathering or heaping up. (*Arapaho* I.) Literally "a heap."

Both hands, with spread and slightly curved fingers, are held pendent about two feet apart before the thighs; then draw them toward one another, horizontally, drawing them upward as they come together. (*Absaroka* I; *Shoshoni and Banak* I; *Kaiowa* I; *Comanche* III; *Apache* II; *Wichita* II.) "An accumulation of objects."

Hands about eighteen inches from the ground in front and about the same distance apart, held scoop-fashion, palms looking toward each other, fingers separated; then, with a diving motion, as if scooping up corn from the ground, bring the hands nearly together, with fingers nearly closed, as though holding the corn, and carry upward to the height of the breast, where the hands are turned over, fingers pointing downward, separated, as though the contents were allowed to drop to the ground. (*Dakota* I, II.)

Open the fingers of both hands, and hold the two hands before the breast, with the fingers upward and a little apart, and the palms turned toward each other, as if grasping a number of things. (*Iroquois* I.)

Place the hands on either side of and as high as the head, then open and close the fingers rapidly four or five times. (*Wyandot* I.) "Counting 'tens' an indefinite number of times."

Clasp the hands effusively before the breast. (*Apache* III.)

Deaf-mute natural signs:

Put the fingers of the two hands together, tip to tip, and rub them with a rapid motion. (*Ballard.*)

Make a rapid movement of the fingers and thumbs of both hands upward and downward, and at the same time cause both lips to touch each other in rapid succession, and both eyes to be half opened. (*Hasenstab.*)

Move the fingers of both hands forward and backward. (*Ziegler.*)

Add to *Ziegler's* sign: slightly opening and closing the hands. (*Wing.*)

——— Horses.

Raise the right arm above the head, palm forward, and thrust forward forcibly on a line with the shoulder. (*Omaha* I.)

——— Persons, etc.

Hands and fingers interlaced. (*Macgowan.*)

Take up a bunch of grass or a clod of earth; place it in the hand of the person addressed, who looks down upon it. (*Omaha* I.) "Represents as many or more than the particles contained in the mass."

——— Much.

Move both hands toward one another and slightly upward. (*Wied.*) I have seen this sign, but I think it is used only for articles that may be piled on the ground or formed into a heap. The sign most in use for the general idea of *much* or *many* I have given. (*Matthews.*)

Bring the hands up in front of the body with the fingers carefully kept distinct. (*Cheyenne* I.)

Both hands closed, brought up in a curved motion toward each other to the level of the neck or chin. (*Cheyenne* II.)

Both hands and arms are partly extended; each hand is then made to describe, simultaneously with the other, from the head downward, the arc of a circle curving outward. This is used for *large* in some senses. (*Ojibwa* V; *Mandan and Hidatsa* I.)

Both hands flat and extended, placed before the breast, finger tips touching, palms down; then separate them by passing outward and downward as if smoothing the outer surface of a globe. (*Absaroka* I; *Shoshoni and Banak* I; *Kaiowa* I; *Comanche* III; *Apache* II; *Wichita* II.) "A heap."

Much is included in *many* or *big*, as the case may require. (*Dakota* I.)

The hands, with fingers widely separated, slightly bent, pointing forward, and backs outward, are to be rapidly approximated through downward curves, from positions twelve to thirty-six inches apart, at the height of the navel, and quickly closed. Or the hands may be moved until the right is above the left. So much that it has to be gathered with both hands. (*Dakota* IV.)

Hands open, palms turned in, held about three feet apart and about two feet from the ground. Raise them about a foot, then bring in an upward curve toward each other. As they pass each other, palms down, the right hand is about three inches above the left. (*Omaha* I.)

Place both hands flat and extended, thumbs touching, palms downward, in front of and as high as the face; then move them outward and downward a short distance toward their respective sides, thus describing the upper half of a circle. (*Wyandot* I.) "A heap."

Both hands clinched, placed as high as and in front of the hips, palms facing opposite sides and about a foot apart, then bring them upward and inward, describing an arc, until the thumbs touch. (*Apache* I.) Fig. 274.

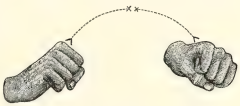

FIG. 274.

Sweep out both hands as if inclosing a large object; wave the hands forward and somewhat upward. (*Apache* III.) "Suggesting immensity."

Deaf-mute sign:

The French deaf-mutes place the two hands, with fingers united and extended in a slight curve, nearly together, left above right, in front of the body, and then raise the left in a direct line above the right, thus suggesting the idea of a large and slightly-rounded object being held between the two palms.

——— And heavy.

Hands open, palms turned in, held about three feet apart, and about two feet from the ground, raise them about a foot; close the fists, backs of hands down, as if lifting something heavy; then move a short distance up and down several times. (*Omaha* I.)

Remarks connected with the signs for *quantity* appear on pages 291, 359, and 382, *supra*.

QUESTION; INQUIRY; INTERROGATION.

The palm of the hand upward and carried circularly outward, and depressed. (*Dunbar.*)

The hand held up with the thumb near the face, and the palm directed toward the person of whom the inquiry is made; then rotated upon the wrist two or three times edgewise, to denote uncertainty. (*Long; Comanche* I; *Wichita* I.) The motion might be mistaken for the derisive, vulgar gesture called "taking a sight," "*donner un pied de nez*," de-

scending to our small boys from antiquity. The separate motion of the fingers in the vulgar gesture as used in our eastern cities is, however, more nearly correlated with some of the Indian signs for *fool*, one of which is the same as that for *Kaiowa*, see TRIBAL SIGNS. It may be noted that the Latin "*sagax*," from which is derived "sagacity," was chiefly used to denote the keen scent of dogs, so there is a relation established between the nasal organ and wisdom or its absence, and that "*suspendere naso*" was a classic phrase for hoaxing. The Italian expressions "*restare con un palmo di naso*," "*con tanto di naso*," etc., mentioned by the canon De Jorio, refer to the same vulgar gesture in which the face is supposed to be thrust forward sillily. Further remarks connected with this sign appear on pp. 304, 305, *supra*.

Extend the open hand perpendicularly with the palm outward, and move it from side to side several times. (*Wied.*) This sign is still used. For "outward," however, I would substitute "forward." The hand is usually, but not always, held before the face. (*Matthews.*) This is not the sign for *question*, but is used to attract attention before commencing a conversation or any other time during the talk, when found necessary. (*McChesney.*) With due deference to Dr. McChesney, this is the sign for *question*, as used by many tribes, and especially Dakotas. The Prince of Wied probably intended to convey the motion of *forward*, *to the front*, when he said *outward*. In making the sign for *attention* the hand is held more nearly horizontal, and is directed toward the individual whose attention is desired. (*Hoffman.*)

Right hand in front of right side of body, forearm horizontal, palm of hand to the left, fingers extended, joined and horizontal, thumb extending upward naturally, turn hand to the left about 60°, then resume first position. Continue this motion for about two to four seconds, depending on earnestness of inquiry. (*Creel.*)

Right hand, fingers pointing upward, palm outward, elevated to the level of the shoulder, extended toward the person addressed, and slightly shaken from side to side. (*Cheyenne* II.)

Hold the elbow of the right arm against the side, extending the right hand, palm inward, with all the fingers straight joined, as far as may be, while the elbow remains fixed against the side; then turn the extended hand to the right and left, repeating this movement several times, being performed by the muscles of the arm. (*Sac, Fox, and Kickapoo* I.)

Place the flat and extended right hand, palm forward, about twelve inches in front of and as high as the shoulder, then shake the hand from side to side as it is moved upward and forward. (*Apache* I.) See Fig. 304, in TENDOY-HUERITO DIALOGUE, p. 486. This may be compared with the ancient Greek sign, Fig. 67, and with the modern Neapolitan sign, Fig. 70, both of which are discussed on p. 291, *supra*.

Deaf-mute natural sign :

A quick motion of the lips with an inquiring look. (*Ballard.*)

Deaf-mute sign :

The French deaf-mutes for *inquiry*, "*qu'est-ce que c'est?*" bring the hands to the lower part of the chest, with open palms about a foot separate and diverging outward.

Australian sign :

One is a sort of note of interrogation. For instance, if I were to meet a native and make the sign: Hand flat, fingers and thumb extended, the two middle fingers touching, the two outer slightly separated from the middle by turning the hand palm upward as I met him, it would mean: "Where are you going?" In other words I should say "*Minna?*" (what name?). (*Smyth.*) Fig. 275.

FIG. 275.

Some comparisons and illustrations connected with the signs for *question* appear on pages 291, 297, and 303, *supra*, and under PHRASES, *infra*. Quintilian remarks upon this subject as follows: "In questioning, we do not compose our gesture after any single manner; the position of the hand, for the most part is to be changed, however disposed before."

SOLDIER.

———, American.

The upright nearly closed hands, thumbs against the middle of the forefingers, being in front of the body, with their thumbs near together, palms forward, separate them about two feet horizontally on the same line. All in a line in front. (*Cheyenne* III; *Dakota* IV.)

Pass each hand down the outer seam of the pants. (*Sac, Fox, and Kickapoo* I.) "Stripes."

Sign for WHITE MAN as follows: The extended index (M turned inward) is drawn from the left side of the head around in front to the right side, about on a line with the brim of the hat, with the back of the hand outward; and then for FORT, viz, on level of the breasts in front of body, both hands with fingers turned inward, straight, backs joined, backs of hands outward, horizontal, turn outward the hands until the fingers are free, curve them, and bring the wrists together so as to describe a circle with a space left between the ends of the curved fingers. (*Dakota* I.) "From his fortified place of abode."

Another: Both hands in front of body, fists, backs outward, hands in contact, draw them apart on a straight line right to right, left to left about two feet, then draw the index, other fingers closed, across the

forehead above the eyebrows. This is the sign preferred by the Sioux. (*Dakota* I.)

Extend the fingers of the right hand; place the thumb on the same plane close beside them, and then bring the thumb side of the hand horizontally against the middle of the forehead, palm downward and little finger to the front. (*Dakota* II; *Ute* I.) "Visor of forage cap."

First make the sign for SOLDIER substantially the same as (*Dakota* VI) below, then that for WHITE MAN, viz.: Draw the opened right hand horizontally from left to right across the forehead a little above the eyebrows, the back of the hand to be upward and the fingers pointing toward the left; or, close all the fingers except the index and draw it across the forehead in the same manner. (*Dakota* IV.) For illustrations of other signs for *white man* see Figs 315 and 329, *infra*.

Place the radial sides of the clinched hands together before the chest, then draw them horizontally apart. (*Dakota* VI; *Arikara* I.) "All in a line." Fig. 276.

FIG. 276.

Put thumbs to temples, and forefingers forward, meeting in front, other fingers closed. (*Apache* III.) "Cap-visor."

———, Arikara.

Make the sign for ARIKARA (see TRIBAL SIGNS) and that for BRAVE. (*Arikara* I.)

———, Dakota.

Make the sign for DAKOTA (see TRIBAL SIGNS) and that for SOLDIER. (*Dakota* VI.)

———, Indian.

Both fists before the body, palms down, thumbs touching, then draw them horizontally apart to the right and left. (*Arapaho* II; *Cheyenne* V; *Ponka* II; *Pani* I.) This is the same sign illustrated in Fig. 276, above, as given by tribes there cited for *white* or *American soldier*. The tribes now cited use it for *a soldier* of the same tribe as the gesturer, or perhaps for *soldier* generically, as they subjoin a tribal sign or the sign for *white man*, when desiring to refer to any other than their own tribe.

TRADE or BARTER; EXCHANGE.

——— TRADE.

First make the sign of EXCHANGE (see below), then pat the left arm with the right finger, with a rapid motion from the hand passing it toward the shoulder. (*Long*.)

Strike the extended index finger of the right hand several times upon that of the left. (*Wied.*) I have described the same sign in different terms and at greater length. It is only necessary, however, to place the fingers in contact once. The person whom the prince saw making this sign may have meant to indicate something more than the simple idea of trade, *i. e.*, trade often or habitually. The idea of frequency is often conveyed by the repetition of a sign (as in some Indian languages by repetition of the root). Or the sign-maker may have repeated the sign to demonstrate it more clearly. (*Matthews.*) Though some difference exists in the motions executed in *Wied's* sign and that of (*Oto and Missouri* I), there is sufficient similarity to justify a probable identity of conception and to make them easily understood. (*Boteler.*) In the author's mind *exchange* was probably intended for one transaction, in which each of two articles took the place before occupied by the other, and *trade* was intended for a more general and systematic barter, indicated by the repetition of strokes. Such distinction would not perhaps have occurred to most observers, but as the older authorities, such as Long and Wied, give distinct signs under the separate titles of *trade* and *exchange* they must be credited with having some reason for so doing. A pictograph connected with this sign is shown on page 381, *supra.*

Cross the forefingers of both hands before the breast. (*Burton.*) "Diamond cut diamond." This conception of one smart trader cutting into the profits of another is a mistake arising from the rough resemblance of the sign to that for *cutting.* Captain Burton is right, however, in reporting that this sign for *trade* is also used for *white man, American*, and that the same Indians using it orally call white men "shwop," from the English or American word "swap" or "swop." This is a legacy from the early traders, the first white men met by the Western tribes, and the expression extends even to the Sahaptins on the Yakama River, where it appears incorporated in their language as *swiapoin.* It must have penetrated to them through the Shoshoni.

Cross the index fingers. (*Macgowan.*)

Cross the forefingers at right angles. (*Arapaho* I.)

Both hands, palms facing each other, forefingers extended, crossed right above left before the breast. (*Cheyenne* II.)

The left hand, with forefinger extended, pointing toward the right (rest of fingers closed), horizontal, back outward, otherwise as (M), is held in front of left breast about a foot; and the right hand, with forefinger extended (J), in front of and near the right breast, is carried outward and struck over the top of the stationary left (+) crosswise, where it remains for a moment. (*Dakota* I.)

Hold the extended left index about a foot in front of the breast, pointing obliquely forward toward the right, and lay the extended right in-

dex at right angles across the left, first raising the right about a foot above the left, palms of both inward, other fingers half closed. This is also an Arapaho sign as well as Dakota. Yours is there and mine is there; take either. (*Dakota* IV.)

Place the first two fingers of the right hand across those of the left, both being slightly spread. The hands are sometimes used, but are placed edgewise. (*Dakota* V.) Fig. 277.

Fig. 277.

Another: The index of the right hand is laid across the forefinger of the left when the transaction includes but two persons trading single article for article. (*Dakota* V.)

Strike the back of the extended index at a right angle against the radial side of the extended forefinger of the left hand. (*Dakota* VI, VII.) Fig. 278.

Fig. 278.

The forefingers are extended, held obliquely upward, and crossed at right angles to one another, usually in front of the chest. (*Mandan and Hidatsa* I.)

Bring each hand as high as the breast, forefinger pointing up, the other fingers closed, then move quickly the right hand to the left, the left to the right, the forefingers making an acute angle as they cross. (*Omaha* I; *Ponka* I.)

The palm point of the right index extended touches the chest; it is then turned toward the second individual interested, then touches the object. The arms are now drawn toward the body, semiflexed, with the hands, in type-positions (W W), crossed, the right superposed to the left. The individual then casts an interrogating glance at the second person. (*Oto and Missouri* I.) "To cross something from one to another."

Close the hands, except the index fingers and the thumbs; with them open, move the hands several times past one another at the height of the breast, the index fingers pointing upward and the thumbs outward. (*Iroquois* I.) "The movement indicates 'exchanging.'"

Hold the left hand horizontally before the body, with the forefinger only extended and pointing to the right, palm downward; then, with the right hand closed, index only extended, palm to the right, place the index at right angles on the forefinger of the left, touching at the second joints. (*Kaiowa* I; *Comanche* III; *Apache* II; *Wichita* II.)

Pass the hands in front of the body, all the fingers closed except the forefingers. (*Sahaptin* I.)

Close the fingers of both hands (K); bring them opposite each shoulder; then bring the hands across each other's pathway, without permitting them to touch. At the close of the sign the left hand will be near and pointing at the right shoulder; right hand will be near and pointing at the left shoulder. (*Comanche* I.)

Close both hands, leaving the forefingers only extended; place the right before and several inches above the left, then pass the right hand toward the left elbow and the left hand toward the right elbow, each hand following the course made by a flourishing cut with a short sword. This sign, according to the informant, is also employed by the Banak and Umatilla Indians. (*Comanche* II; *Pai-Ute* I.)

The forefingers of both hands only extended, pass the left from left to right, and the right at the same time crossing its course from the tip toward the wrist of the left, stopping when the wrists cross. (*Ute* I.) "Exchange of articles."

Right hand carried across chest, hand extended, palm upward, fingers and thumb closed as if holding something; left hand, in same position, carried across the right, palm downward. (*Kutchin* I.)

Hands pronated and forefingers crossed. (*Zuñi* I.)

Deaf-mute natural sign:

Close the hand slightly, as if taking something, and move it forward and open the hand as if to drop or give away the thing, and again close and withdraw the hand as if to take something else. (*Ballard.*)

American instructed deaf-mutes use substantially the sign described by (*Mandan and Hidatsa* I).

——— To buy.

Hold the left hand about twelve inches before the breast, the thumb resting on the closed third and fourth fingers; the fore and second fingers separated and extended, palm toward the breast; then pass the extended index into the crotch formed by the separated fingers of the left hand. This is an invented sign, and was given to illustrate the difference between buying and trading. (*Ute* I.) Fig. 279.

Fig. 279.

Deaf-mute natural sign:

Make a circle on the palm of the left hand with the forefinger of the right hand, to denote *coin*, and close the thumb and finger as if to take the money, and put the hand forward to signify giving it to some one, and move the hand a little apart from the place where it left the money, and then close and withdraw the hand, as if to take the thing purchased. (*Ballard.*)

Italian sign :

To indicate paying, in the language of the fingers, one makes as though he put something, piece after piece, from one hand into the other —a gesture, however, far less expressive than that when a man lacks money, and yet cannot make up a face to beg it; or simply to indicate want of money, which is to rub together the thumb and forefinger, at the same time stretching out the hand. (*Butler.*) An illustration from De Jorio of the Neapolitan sign for *money* is given on page 297, *supra.*

——— EXCHANGE.

The two forefingers are extended perpendicularly, and the hands are then passed by each other transversely in front of the breast so as nearly to exchange positions. (*Long.*)

Pass both hands, with extended forefingers, across each other before the breast. (*Wied.*) See remarks on this author's sign for TRADE, *supra.*

Hands brought up to front of breast, forefingers extended and other fingers slightly closed; hands suddenly drawn toward and past each other until forearms are crossed in front of breast. (*Cheyenne* II.) "Exchange; right hand exchanging position with the left."

Left hand, with forefinger extended, others closed (M, except back of hand outward), is brought, arm extended, in front of the left breast, and the extended forefinger of the right hand, obliquely upward, others closed, is placed crosswise over the left and maintained in that position for a moment, when the fingers of the right hand are relaxed (as in Y), brought near the breast with hand horizontal, palm inward, and then carried out again in front of right breast twenty inches, with palm looking toward the left, fingers pointing forward, hand horizontal, and then the left hand performs the same movements on the left side of the body, (*Dakota* I.) "You give me, I give you."

The hands, backs forward, are held as index hands, pointing upward. the elbows being fully bent; each hand is then, simultaneously with the other, moved to the opposite shoulder, so that the forearms cross one another almost at right angles. (*Mandan and Hidatsa* I.)

YES; AFFIRMATION; IT IS SO. (Compare GOOD.)

The motion is somewhat like *truth*, viz: The forefinger in the attitude of pointing, from the mouth forward in a line curving a little upward, the other fingers being carefully closed; but the finger is held rather more upright, and is passed nearly straight forward from opposite the breast,

and when at the end of its course it seems gently to strike something, though with rather a slow and not suddenly accelerated motion. (*Long.*)

Wave the hand straight forward from the face. (*Burton.*) This may be compared with the forward nod common over most of the world for assent, but that gesture is not universal, as the New Zealanders elevate the head and chin, and the Turks are reported by several travelers to shake the head somewhat like our negative. Rev. H. N. Barnum denies that report, giving below the gesture observed by him. He, however, describes the Turkish gesture sign for *truth* to be "gently bowing with head inclined to the right." This sidewise inclination may be what has been called the shake of the head in affirmation.

Another: Wave the hand from the mouth, extending the thumb from the index and closing the other three fingers. (*Burton.*)

Gesticulate vertically downward and in front of the body with the extended forefinger (right hand usually), the remaining fingers and thumb closed, their nails down. (*Creel*; *Arapaho* I.)

Right hand elevated to the level and in front of the shoulder, two first fingers somewhat extended, thumb resting against the middle finger; sudden motion in a curve forward and downward. (*Cheyenne* II.) It has been suggested that the correspondence between this gesture and the one given by the same gesturer for *sitting* (made by holding the right hand to one side, fingers and thumb drooping, and striking downward to the ground or object to be sat upon) seemingly indicates that the origin of the former is in connection with the idea of "resting," or "settling a question." It is however at least equally probable that the forward and downward curve is an abbreviation of the sign for *truth*, *true*, a typical description of which follows given by (*Dakota* I). The sign for *true* can often be interchanged with that for *yes*, in the same manner as the several words.

The index of the horizontal hand (M), other fingers closed, is carried straight outward from the mouth. This is also the sign for *truth*. (*Dakota* I.) "But one tongue."

Extend the right index, the thumb against it, nearly close the other fingers, and holding it about a foot in front of the right breast, bend the hand from the wrist downward until the end of the index has passed about six inches through an arc. Some at the same time move the hand forward a little. (*Dakota* IV.) "A nod; the hand representing the head and the index the nose."

Hold the naturally closed hand before the right side of the breast, or shoulder, leaving the index and thumb extended, then throw the hand

downward, bring the index against the inner side of the thumb. (*Dakota* VI, VII, VIII.) Fig. 280. Compare also Fig. 61, p. 286, *supra*, Quintilian's sign for approbation.

FIG. 280.

The right hand, with the forefinger only extended and pointing forward, is held before and near the chest. It is then moved forward one or two feet, usually with a slight curve downward. (*Mandan and Hidatsa* I.)

Bend the right arm, pointing toward the chest with the index finger; unbend, throwing the hand up and forward. (*Omaha* I.)

Another: Close the three fingers, close the thumb over them, extend forefinger, and then shake forward and down. This is more emphatic than the preceding, and signifies, *Yes, I know*. (*Omaha* I.)

The right arm is raised to head with the index finger in type-position (I 1), modified by being more opened. From aside the head the hands sweep in a curve to the right ear as of something entering or hearing something; the finger is then more open and carried direct to the ground as something emphatic or direct. (*Oto and Missouri* I.) "'I hear,' emphatically symbolized." It is doubted if this sign is more than an expression of understanding which may or may not imply positive assent. It would not probably be used as a direct affirmative, for instance, in response to a question.

The hand open, palm downward, at the level of the breast, is moved forward with a quick downward motion from the wrist, imitating a bow of the head. (*Iroquois* I.)

Throw the closed right hand, with the index extended and bent, as high as the face, and let it drop again naturally; but as the hand reaches its greatest elevation the index is fully extended and suddenly drawn into the palm, the gesture resembling a beckoning from above toward the ground. (*Kaiowa* I; *Comanche* III; *Apache* II; *Wichita* II.)

Quick motion of the right hand forward from the mouth; first position about six inches from the mouth and final as far again away. In first position the index finger is extended, the others closed; in final, the index loosely closed, thrown in that position as the hand is moved forward, as though hooking something with it; palm of hand out. (*Sahaptin* I.)

Another: Move right hand to a position in front of the body, letting arm hang loosely at the side, the thumb standing alone, all fingers hooked except forefinger, which is partially extended (E 1, palm up-

ward). The sign consists in moving the forefinger from its partially extended position to one similar to the others, as though making a sly motion for some one to come to you. This is done once each time the assent is made. More emphatic than the preceding. (*Sahaptin* I.) "We are together, think alike."

Deaf-mute natural sign:

Indicate by nodding the head. (*Ballard.*)

Deaf-mute sign:

The French mutes unite the extremities of the index and thumb so as to form a circle and move the hand downward with back vertical and turned outward. It has been suggested in explanation that the circle formed and exhibited is merely the letter O, the initial of the word *oui.*

Fiji sign:

Assent is expressed, not by a downward nod as with ourselves, but by an upward nod; the head is jerked backward. Assent is also expressed by uplifting the eyebrows. (*Fison.*)

Turkish sign:

One or two nods of the head forward. (*Barnum.*)

Other remarks and illustrations upon the signs for *yes* are given on page 286, *supra.*

TRIBAL SIGNS.

ABSAROKA OR CROW.

The hands held out each side, and striking the air in the manner of flying. (*Long.*)

Imitate the flapping of the bird's wings with the two hands, palms downward, brought close to the shoulder. (*Burton.*)

Imitate the flapping of a bird's wings with the two hands, palms to the front and brought close to the shoulder. (*Creel.*)

Place the flat hand as high as and in front or to the side of the right shoulder, move it up and down, the motion occurring at the wrist. For more thorough representation both hands are sometimes employed. (*Arapaho* II; *Cheyenne* V; *Dakota* V, VI, VIII; *Ponka* II; *Kaiowa* I; *Pani* I; *Comanche* III; *Apache* II; *Wichita* II.) "Bird's wing."

Both hands extended, with fingers joined (W), held near the shoulders, and flapped to represent the wings of a crow. (*Dakota* II, III.)

At the height of the shoulders and a foot outward from them, move the upright hands forward and backward twice or three times from the wrist, palms forward, fingers and thumbs extended and separated a little; then place the back or the palm of the upright opened right hand against the upper part of the forehead; or half close the fingers, placing the end of the thumb against the ends of the fore and middle fingers, and then place the back of the hand against the forehead. This sign is also made by the Arapahos. (*Dakota* IV.) "To imitate the flying of a bird, and also indicate the manner in which the Absaroka wear their hair."

FIG. 281.

Make with the arms the motion of flapping wings. (*Kutine* I.)

The flat right hand, palm outward to the front and right, is held in front of the right shoulder, and quickly waved back and forth a few times. When made for the information of one ignorant of the common sign, both hands are used, and the hands are moved outward from the body, though still near the shoulder. (*Shoshoni and Banak* I.) "Wings, *i. e.*, of a crow." Fig. 281.

APACHE.

Make either of the signs for POOR, IN PROPERTY, by rubbing the index back and forth over the extended left forefinger; or, by passing the extended index alternately along the upper and lower sides of the extended left forefinge from tip to base. (*Kaiowa* I; *Comanche* III; *Apache* II; *Wichita* II.) Fig. 282. "It is said that when the first Apache came to the region they now occupy he was asked who or what he was, and not understanding the language he merely made the sign for *poor*, which expressed his condition."

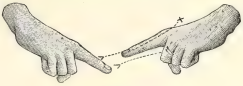

FIG. 282.

FIG. 283.

Rub the back of the extended left forefinger from end to end with the extended index. (*Comanche* II; *Ute* I.) "Poor, poverty-stricken."

———, Coyotero.

Place the back of the right hand near the end of the foot, the fingers curved upward, to represent the turned-up toes of the moccasins. (*Pima and Papago* I; *Apache* I.) Fig. 283.

———, Mescalero.

Same sign as for LIPAN *q. v.* (*Kaiowa* I; *Comanche* III; *Apache* II; *Wichita* II.)

———, Warm Spring.

Hand curved (Y, more flexed) and laid on its back on top of the foot (*moccasins much curved up at toe*); then draw hands up legs to near knee, and cut off with edges of hands (*boot tops*). (*Apache* III.) "Those who wear booted moccasins with turn-up toes."

ARAPAHO.

The fingers of one hand touch the breast in different parts, to indicate the tattooing of that part in points. (*Long.*)

Seize the nose with the thumb and forefinger. (Randolph B. Marcy, captain United States Army, in *The Prairie Traveler. New York*, 1859, p. 215.)

Rub the right side of the nose with the forefinger: some call this tribe the "Smellers," and make their sign consist of seizing the nose with the thumb and forefinger. (*Burton.*)

Finger to side of nose. (*Macgowan.*)

Touch the left breast, thus implying what they call themselves, viz: the "Good Hearts." (*Arapaho* I.)

Rub the side of the extended index against the right side of the nose. (*Arapaho* II; *Cheyenne* V; *Kaiowa* I; *Comanche* III; *Apache* II; *Wichita* II.)

Hold the left hand, palm down, and fingers extended; then with the right hand, fingers extended, palm inward and thumb up, make a sudden stroke from left to right across the back of the fingers of the left hand, as if cutting them off. (*Sac, Fox, and Kickapoo* I.) This is believed to be an error of the authority, and should apply to the CHEYENNE tribal sign.

Join the ends of the fingers (the thumb included) of the right hand, and, pointing toward the heart near the chest, throw the hand forward and to the right once, twice, or many times, through an arc of about six inches. (*Dakota* IV.) "Some say they use this sign because these Indians tattoo their breasts."

Collect the fingers and thumb of the right hand to a point, and tap the tips upon the left breast briskly. (*Comanche* II; *Ute* I.) "Good-hearted." It was stated by members of the various tribes at Washington, in 1880, that this sign is used to designate the Northern Arapahos, while that in which the index rubs against or passes upward alongside of the nose refers to the Southern Arapahos.

Another: Close the right hand, leaving the index only extended; then rub it up and down, held vertically, against the side of the nose where it joins the cheek. (*Comanche* II; *Ute* I.)

The fingers and thumb of the right hand are brought to a point, and tapped upon the right side of the breast. (*Shoshoni and Banak* I.)

ARIKARA. (Corruptly abbreviated REE.)

Imitate the manner of shelling corn, holding the left hand stationary, the shelling being done with the right. (*Creel.*) Fig. 284.

With the right hand closed, curve the thumb and index, join their tips so as to form a circle, and place to the lobe of the ear. (*Absaroka* I; *Hidatsa* I.) "Big ear-rings." Fig. 285.

Both hands, fists, (B, except thumbs) in front of body, backs looking toward the sides of the body, thumbs obliquely upward, left hand stationary, the backs of the fingers of the two hands touching, carry the right thumb forward and backward at the inner side of the left thumb and without moving the hand from the left, in imitation of the act of shelling corn. (*Dakota* I, VII, VIII.)

Collect the fingers and thumb of the right hand nearly to a point, and make a tattooing or dotting motion toward the upper portion of the cheek. This is the old sign, and was used by them previous to the adoption of the more modern one representing "corn-eaters." (*Arikara* I.)

FIG. 285.

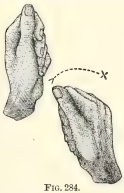

FIG. 284.

Place the back of the closed right hand transversely before the mouth, and rotate it forward and backward several times. This gesture may be accompanied, as it sometimes is, by a motion of the jaws as if eating, to illustrate more fully the meaning of the rotation of the fist. (*Kaiowa* I; *Comanche* III; *Wichita* II; *Apache* I.) "Corn-eater; eating corn from the ear."

Signified by the same motions with the thumbs and forefingers that are used in shelling corn. The dwarf Ree (Arikara) corn is their peculiar possession, which their tradition says was given to them by a superior being, who led them to the Missouri River and instructed them how to plant it. (Rev. C. L. Hall, in *The Missionary Herald, April*, 1880.) "They are the corn-shellers." Have seen this sign used by the Arikaras as a tribal designation. (*Dakota* II.)

ASSINABOIN.

Hands in front of abdomen, horizontal, backs outward, ends of fingers pointing toward one another, separated and arched (H), then moved up

and down and from side to side as though covering a corpulent body. This sign is also used to indicate the Gros Ventres of the Prairie or Atsina. (*Dakota* I.)

Make the sign of *cutting the throat.* (*Kutine* I.) As the Assinaboins belong to the Dakotan stock, the sign generally given for the Sioux may be used for them also.

With the right hand flattened, form a curve by passing it from the top of the chest to the pubis, the fingers pointing to the left, and the back forward. (*Shoshoni and Banak* I.) "Big bellies."

ATSINA, LOWER GROS VENTRE.

Both hands closed, the tips of the fingers pointing toward the wrist and resting upon the base of the joint, the thumbs lying upon and extending over the middle joint of the forefingers; hold the left before the chest, pointing forward, palm up, placing the right, with palm down, just back of the left, and move as if picking small objects from the left with the tip of the right thumb. (*Absaroka* I; *Shoshoni and Banak* I.) "Corn-shellers."

Bring the extended and separated fingers and thumb loosely to a point, flexed at the metacarpal joints; point them toward the left clavicle, and imitate a dotting motion as if tattooing the skin. (*Kaiowa* I; *Comanche* III; *Apache* II; *Wichita* II.) "They used to tattoo themselves, and live in the country south of the Dakotas."

See also the sign of (*Dakota* I) under ASSINABOIN.

BANAK.

Make a whistling sound "phew" (beginning at a high note and ending about an octave lower); then draw the extended index across the throat from the left to the right and out to nearly at arm's length. They used to cut the throats of their prisoners. (*Pai-Ute* I.)

Major Haworth states that the *Banaks* make the following sign for themselves: Brush the flat right hand backward over the forehead as if forcing back the hair. This represents the manner of wearing the tuft of hair backward from the forehead. According to this informant, the Shoshoni use the same sign for BANAK as for themselves.

BLACKFEET. (This title refers to the Algonkian Blackfeet, properly called SATSIKA. For the Dakota Blackfeet, or Sihasapa, see under head of DAKOTA.)

The finger and thumb encircle the ankle. (*Long.*)

Pass the right hand, bent spoon-fashion, from the heel to the little toe of the right foot. (*Burton.*)

The palmar surfaces of the extended fore and second fingers of the right hand (others closed) are rubbed along the leg just above the ankle. This would not seem to be clear, but these Indians do not make any sign indicating *black* in connection with the above. The sign does not, however, interfere with any other sign as made by the Sioux. (*Creel; Dakota* I.) "Black feet."

Pass the flat hand over the outer edge of the right foot from the heel to beyond the toe, as if brushing off dust. (*Dakota* V, VII, VIII.) Fig. 286.

FIG. 286.

Touch the right foot with the right hand. (*Kutine* I.)

Close the right hand, thumb resting over the second joint of the forefinger, palm toward the face, and rotate over the cheek, though an inch or two from it. (*Shoshoni and Banak* I.) "From manner of painting the cheeks." Fig. 287.

CADDO.

Pass the horizontally extended index from right to left under the nose. *Arapaho* II; *Cheyenne* V; *Kaiowa* I; *Comanche* I, II, III; *Apache* II; *Wichita* I, II.) "'Pierced noses,' from former custom of perforating the septum for the reception of rings." Fig. 288. This sign is also used for the Sahaptin. For some remarks see page 345.

FIG. 287.

FIG. 288.

CALISPEL. See PEND D'OREILLE.

CHEYENNE.

Draw the hand across the arm, to imitate cutting it with a knife. (*Marcy* in *Prairie Traveller*, *loc. cit.*, p. 215.)

Draw the lower edge of the right hand across the left arm as if gashing it with a knife. (*Burton.*)

With the index-finger of the right hand proceed as if cutting the left arm in different places with a sawing motion from the wrist upward, to represent the cuts or burns on the arms of that nation. (*Long.*)

Bridge palm of left hand with index-finger of right. (*Macgowan.*)

Draw the extended right hand, fingers joined, across the left wrist as if cutting it. (*Arapaho* I.)

Pass the ulnar side of the extended index repeatedly across the extended finger and back of the left hand. Frequently, however, the index is drawn across the wrist or forearm. (*Arapaho* II; *Cheyenne* V; *Ponka* II; *Pani* I.) Fig. 289. See p. 345 for remarks.

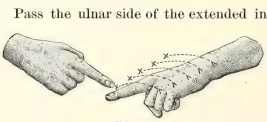

FIG. 289.

The extended index, palm upward, is drawn across the forefinger of the left hand (palm inward), several times, left hand stationary, right

hand is drawn toward the body until the index is drawn clear off; then repeat. Some Cheyennes believe this to have reference to the former custom of cutting the arm as offerings to spirits, while others think it refers to a more ancient custom of cutting off the enemy's fingers for necklaces. (*Cheyenne* II.)

Place the extended index at the right side of the nose, where it joins the face, the tip reaching as high as the forehead, and close to the inner corner of the eye. This position makes the thumb of the right hand rest upon the chin, while the index is perpendicular. (*Sac, Fox, and Kickapoo* I.) It is considered that this sign, though given to the collaborator as expressed, was an error. It applies to the Southern Arapahos. Lieutenant Creel states the last remark to be correct, the gesture having reference to the Southern bands.

As though sawing through the left forearm at its middle with the edge of the right held back outward, thumb upward. Sign made at the left side of the body. (*Dakota* I.) "Same sign as for a *saw*. The Cheyenne Indians are known to the Sioux by the name of 'The Saws.'"

Right-hand fingers and thumb extended and joined (as in S), outer edge downward, and drawn sharply across the other fingers and forearm as if cutting with a knife. (*Dakota* III.)

Draw the extended right index or the ulnar (inner) edge of the open right hand several times across the base of the extended left index, or across the left forearm at different heights from left to right. This sign is also made by the Arapahos. (*Dakota* IV.) "Because their arms are marked with scars from cuts which they make as offerings to spirits."

Draw the extended index several times across the extended forefinger from the tip toward the palm, the latter pointing forward and slightly toward the right. From the custom of striping arms transversely with colors. (*Kaiowa* I; *Comanche* II, III; *Apache* II; *Ute* I; *Wichita* II.)

Another: Make the sign for DOG, viz: Close the right hand, leaving the index and second fingers only extended and joined, hold it forward from and lower than the hip and draw it backward, the course following the outline of a dog's form from head to tail; then add the sign TO EAT, as follows: Collect the thumb, index, and second fingers to a point, hold them above and in front of the mouth and make a repeated dotting motion toward the mouth. This sign is generally used, but the other and more common one is also employed, especially so with individuals not fully conversant with the sign language as employed by the Comanches, &c. (*Kaiowa* I; *Comanche* III; *Apache* II; *Wichita* II.) "Dog-eaters."

Draw the extended index across the back of the left hand and arm as if cutting it. The index does not touch the arm as in signs given for the same tribe by other Indians, but is held at least four or five inches from it. (*Shoshoni and Banak* I.)

CHIPEWAY. See OJIBWA.

COMANCHE.

Imitate, by the waving of the hand or forefinger, the forward crawling motion of a snake. (*Burton*, also *Blackmore* in introduction to Dodge's *Plains of the Great West. New York*, 1877, p. xxv.) The same sign is used for the Shoshoni, more commonly called "Snake", Indians, who as well as the Comanches belong to the Shoshonian linguistic family. "The silent stealth of the tribe." (*Dodge; Marcy* in *Thirty Years of Army Life on the Border. New York*, 1866, p. 33.) Rev. A. J. Holt remarks, however, that among the Comanches themselves the conception of this sign is the trailing of a rope, or lariat. This refers probably to their well-known horsemanship.

Motion of a snake. (*Macgowan.*)

Hold the elbow of the right arm near the right side, but not touching it; extend the forearm and hand, palm inward, fingers joined on a level with the elbow, then with a shoulder movement draw the forearm and hand back until the points of the fingers are behind the body; at the same time that the hand is thus being moved back, turn it right and left several times. (*Creel; Sac, Fox, and Kickapoo* I.) "Snake in the grass. A snake drawing itself back in the grass instead of crossing the road in front of you."

Another: The sign by and for the Comanches themselves is made by holding both hands and arms upward from the elbow, both palms inward, and passing both hands with their backs upward along the lower end of the hair to indicate *long hair*, as they never cut it. (*Sac, Fox, and Kickapoo* I.)

Right hand horizontal, flat, palm downward (W), advanced to the front by a motion to represent the crawling of a snake. (*Dakota* III.)

Extend the closed right hand to the front and left; extend the index, palm down, and rotate from side to side while drawing it back to the right hip. (*Arapaho* II; *Cheyenne* V; *Dakota* VI, VII, VIII; *Ponka* II; *Kaiowa* I; *Pani* I; *Comanche* III; *Apache* II; *Wichita* II.) This motion is just the reverse of the sign for *Shoshoni*, see Fig. 297 *infra*.

Make the reverse gesture for *Shoshoni*, *i. e.*, begin away from the body, drawing the hand back to the side of the right hip while rotating it. (*Comanche* II.)

CREE, KNISTENO, KRISTENEAUX.

Sign for WAGON and then the sign for MAN. (*Dakota* I.) "This indicates the Red River half-breeds, with their carts, as these people are so known from their habit of traveling with carts."

Place the first and second fingers of the right hand in front of the mouth. (*Kutine* I.)

CROW. See ABSAROKA.

DAKOTA, or SIOUX.

The edge of the hand passed across the throat, as in the act of cutting that part. (*Long; Marcy* in *Army Life*, p. 33.)

Draw the lower edge of the hand across the throat. (*Burton.*)

Draw the extended right hand across the throat. (*Arapaho* I.) "The cut-throats."

Pass the flat right hand, with palm down, from left to right across the throat. (*Arapaho* II; *Cheyenne* V; *Dakota* VI, VIII; *Ponka* II; *Pani* I.)

Draw the forefinger of the left hand from right to left across the throat. (*Sac, Fox, and Kickapoo* I.) "A cut-throat."

Forefinger and thumb of right hand extended (others closed) is drawn from left to right across the throat as though cutting it. The Dakotas have been named the "cut-throats" by some of the surrounding tribes. (*Dakota* I.) "Cut-throats."

Right hand horizontal, flat, palm downward (as in W), and drawn across the throat as if cutting with a knife. (*Dakota* II, III.)

Draw the open right hand, or the right index, from left to right horizontally across the throat, back of hand upward, fingers pointing toward the left. This sign is also made by the Arapahos. (*Dakota* IV.) "It is said that after a battle the Utes took many Sioux prisoners and cut their throats; hence the sign "cut-throats."

Draw the extended right hand, palm downward, across the throat from left to right. (*Kaiowa* I; *Comanche* II, III; *Shoshoni and Banak* I; *Ute* I; *Apache* II; *Wichita* II.) "Cut-throats." Fig 290.

FIG. 290.

———, Blackfoot (Sihasapa).

Pass the flat right hand along the outer edge of the foot from the heel to beyond the toes. (*Dakota* VIII; *Hidatsa* I; *Ponka* II; *Arikara* I; *Pani* I.) Same as Fig. 286, above.

Pass the right hand quickly over the right foot from the great toe outward, turn the heel as if brushing something therefrom. (*Dakota* V.)

Pass the widely separated thumb and index of the right hand over the lower leg, from just below the knee nearly down to the heel. (*Kaiowa* I; *Comanche* III; *Apache* II; *Wichita* II.)

——, Brulé.

Rub the upper and outer part of the right thigh in a small circle with the open right hand, fingers pointing downward. This sign is also made by the Arapahos. (*Dakota* IV.) "These Indians were once caught in a prairie fire, many burned to death, and others badly burned about the thighs; hence the name Si-ca^{n}-gu 'burnt thigh' and the sign. According to the Brulé chronology, this fire occurred in 1763, which they call 'The-People-were-burned-winter.'"

Pass the flat right hand quickly over the thigh from near the buttock forward, as if brushing dust from that part. (*Dakota* V, VI, VII, VIII.)

Brush the palm of the right hand over the right thigh, from near the buttock toward the front of the middle third of the thigh. (*Kaiowa* I; *Comanche* III; *Apache* II; *Wichita* II.)

——, Ogalala.

Fingers and thumb separated, straight (as in R), and dotted about over the face to represent the marks made by the small-pox. (*Arapaho* II; *Cheyenne* V; *Dakota* III, VI, VII, VIII.) "This band suffered from the disease many years ago."

With the thumb over the ends of the fingers, hold the right hand upright, its back forward, about six inches in front of the face, or on one side of the nose near the face, and suddenly extend and spread all the fingers, thumb included. (*Dakota* IV.) "The word *Ogalala* means scattering or throwing at, and the name was given them, it is said, after a row in which they threw ashes into one another's faces."

FIG. 291.

FLATHEAD, or SELISH.

One hand placed on the top of the head, and the other on the back of the head. (*Long.*)

Place the right hand to the top of the head. (*Kutine* I.)

Pat the right side of the head above and back of the ear with the flat right hand. (*Shoshoni and Banak* I.) From the elongation of the occiput. Fig. 291.

FOX, or OUTAGAMI.

Same sign as for SAC. (*Sac, Fox, and Kickapoo* I.)

GROS VENTRE. See HIDATSA.

HIDATSA, GROS VENTRE, or MINITARI.

Both hands flat and extended, palms toward the body, with the tips of the fingers pointing toward one another; pass from the top of the chest downward, outward, and inward toward the groin. (*Absaroka* I; *Dakota* V, VI, VII, VIII; *Shoshoni and Banak* I.) "Big belly."

Left and right hands in front of breast, left placed in position first, separated about four or five inches, left hand outside of the right, horizontal, backs outward, fingers extended and pointing left and right; strike the back of the right against the palm of the left several times, and then make the sign for GO, GOING, as follows: Both hands (A 1) brought to the median line of body on a level with the breast, some distance apart, then describe a series of half circles or forward arch-like movements with both hands. (*Dakota* I.) "The Gros Ventre Indians, Minitaris (the Hidatsa Indians of *Matthews*), are known to the Sioux as the Indians who went to the mountains to kill their enemies; hence the sign."

Express with the hand the sign of a big belly. (*Dakota* III.)

Pass the flat right hand, back forward, from the top of the breast, downward, outward, and inward to the pubis. (*Dakota* VI; *Hidatsa* I; *Arikara* I.) "Big belly."

INDIAN (generically).

Hand in type-position K, inverted, back forward, is raised above the head with forefinger directed perpendicularly to the crown. Describe with it a short gentle curve upward and backward in such a manner that the finger will point upward and backward, back outward, at the termination of the motion. (*Ojibwa* V.) "Indicates a feather planted upon the head—the characteristic adornment of the Indian."

Make the sign for WHITE MAN, viz: Draw the open right hand horizontally from left to right across the forehead a little above the eyebrows, the back of the hand to be upward and the fingers pointing toward the left, or close all the fingers except the index, and draw it across the forehead in the same manner; then make the sign for NO; then move the upright index about a foot from side to side, in front of right shoulder, at the same time rotating the hand a little. (*Dakota* IV.)

Rub the back of the extended left hand with the palmar surfaces of the extended fingers of the right. (*Comanche* II.) "People of the same kind; dark-skinned."

Rub the back of the left hand with the index of the right. (*Pai-Ute* I; *Wichita* I.)

KAIOWA.

Make the signs of the PRAIRIE and of DRINKING WATER. (*Burton; Blackmore* in Dodge's *Plains of the Great West. New York*, 1877, p. xxiv.)

Cheyennes make the same sign as (*Comanche* II), and think it was intended to convey the idea of cropping the hair. The men wear one side of the hair of the head full length and done up as among the Cheyennes, the other side being kept cropped off about even with the neck and hanging loose. (*Cheyenne* II.)

Right-hand fingers and thumb, extended and joined (as in W), placed in front of right shoulder, and revolving loosely at the wrist. (*Dakota* III.)

Place the flat hand with extended and separated fingers before the face, pointing forward and upward, the wrist near the chin; pass it upward and forward several times. (*Kaiowa* I; *Comanche* III; *Apache* II; *Wichita* II.)

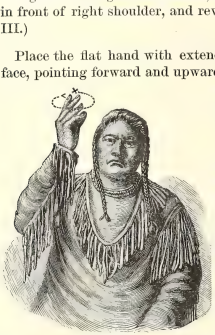

FIG. 292.

Place the right hand a short distance above the right side of the head, fingers and thumb separated and extended; shake it rapidly from side to side, giving it a slight rotary motion in doing so. (*Comanche* II.) "Rattle-brained." Fig. 292. See p. 345 for remarks upon this sign.

Same sign as (*Comanche* II), with the exception that both hands are generally used instead of the right one only. (*Ute* I.)

Make a rotary motion of the right hand, palm extended upward and outward by the side of the head. (*Wichita* I.) "Crazy heads."

KICKAPOO.

With the thumb and finger go through the motion of clipping the hair over the ear; then with the hand make a sign that the borders of the leggings are wide. (*Sac, Fox, and Kickapoo* I.)

KNISTENO or KRISTENEAUX. See CREE.

KUTINE.

Place the index or second finger of the right hand on each side of the left index finger to imitate riding a horse. (*Kutine* I.)

Hold the left fist, palm upward, at arm's length before the body, the right as if grasping the bowstring and drawn back. (*Shoshoni and Banak* I.) "From their peculiar manner of holding the long bow horizontally in shooting." Fig. 293.

FIG. 293.

LIPAN.

With the index and second fingers only extended and separated, hold the hand at arm's length to the front of the left side; draw it back in distinct jerks; each time the hand rests draw the fingers back against the inside of the thumb, and when the hand is again started on the next movement backward snap the fingers to full length. This is repeated five or six times during the one movement of the hand. The country which the Lipans at one time occupied contained large ponds or lakes, and along the shores of these the reptile was found which gave them this characteristic appellation. (*Kaiowa* I; *Comanche* III; *Apache* III; *Wichita* II.) "Frogs." Fig. 294.

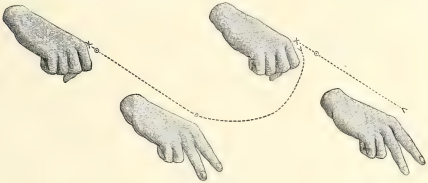

FIG. 294.

MANDAN.

The first and second fingers of the right hand extended, separated, backs outward, other fingers and thumb closed, are drawn from the left shoulder obliquely downward in front of the body to the right hip. (*Dakota* I.) "The Mandan Indians are known to the Sioux as 'The people who wear a scarlet sash, with a train,' in the manner above described."

MINITARI. See HIDATSA.

NEZ PERCÉS. See SAHAPTIN.

OJIBWA, or CHIPPEWA.

Right hand horizontal, back outward, fingers separated, arched, tips pointing inward, is moved from right to left breast and generally over the front of the body with a trembling motion and at the same time a slight outward or forward movement of the hand as though drawing something out of the body, and then make the sign for MAN, viz: The right-hand is held in front of the right breast with the forefinger extended, straight upright (J), with the back of the hand outward; move the hand upward and downward with finger extended. (*Dakota* I.) "Perhaps the first Chippewa Indian seen by a Sioux had an eruption on his body, and from that his people were given the name of the 'People with a breaking out,' by which name the Chippewas have ever been known by the Sioux."

OSAGE, or WASAJI.

Pull at the eyebrows over the left eye with the thumb and forefinger of the left hand. This sign is also used by the Osages themselves. (*Sac, Fox, and Kickapoo* I.)

Hold the flat right hand, back forward, with the edge pointing backward, against the side of the head, then make repeated cuts, and the hand is moved backward toward the occiput. (*Kaiowa* I; *Comanche* III; *Apache* II; *Wichita* II.) "Former custom of shaving the hair from the sides of the head, leaving but an occipito-frontal ridge."

Pass the flat and extended right hand backward over the right side of the head, moving the index against the second finger in imitation of cutting with a pair of scissors. (*Comanche* II.) "Represents the manner of removing the hair from the sides of the head, leaving a ridge only from the forehead to the occiput."

OUTAGAMI. See FOX.

PANI (Pawnee).

Imitate a wolf's ears with the two forefingers of the right hand extended together, upright, on the left side of the head. (*Burton.*)

Place a hand on each side of the forehead, with two fingers pointing to the front to represent the narrow, sharp ears of the wolf. (*Marcy* in *Prairie Traveler*, p. 215.)

Extend the index and second fingers of the right hand upward from the right side of the head. (*Arapaho* II; *Cheyenne* V; *Dakota* VII, VIII; *Ponka* II; *Pani* I; *Comanche* II.)

Right hand, as (N), is passed from the back part of the right side of the head, forward seven or eight inches. (*Dakota* I.) "The Pani Indians are known as the *Shaved-heads*, *i. e.*, leaving only the scalp locks on the head."

First and second fingers of right hand, straight upward and separated, remaining fingers and thumb closed (as in N), like the ears of a small wolf. (*Dakota* III.)

Place the closed right hand to the side of the temple, palm forward leaving the index and second fingers extended and slightly separated, pointing upward. This is ordinarily used, though, to be more explicit, both hands may be used. (*Kaiowa* I; *Comanche* III; *Ute* I; *Apache* II; *Wichita* II.) For illustration see Fig. 336, facing page 531.

PEND D'OREILLE, or CALISPEL.

Make the motion of paddling a canoe. (*Kutine* I.)

Both fists are held as if grasping a paddle vertically downward and working a canoe. Two strokes are made on each side of the body from the side backward. (*Shoshoni and Banak* I.) Fig. 295.

FIG. 295.

PUEBLO.

Place the clinched hand back of the occiput as if grasping the queue, then place both fists in front of the right shoulder, rotating them slightly to represent a loose mass of an imaginary substance. Represents the large mass of hair tied back of the head. (*Arapaho* II; *Cheyenne* V.)

REE. See ARIKARA.

SAC, or SAUKI.

Pass the extended palm of the right hand over the right side of the head from front to back, and the palm of the left hand in the same manner over the left side of the head. (*Sac, Fox, and Kickapoo* I.) "Shaved-headed Indians."

SAHAPTIN, or NEZ PERCÉS.

The right index, back outward, passed from right to left under the nose. Piercing the nose to receive the ring. (*Creel; Dakota* I.)

Place the thumb and forefinger to the nostrils. (*Kutine* I.)

Close the right hand, leaving the index straight but flexed at right angles with the palm; pass it horizontally to the left by and under the nose. (*Comanche* II.) "Pierced nose." Fig. 296. This sign is made by the Nez Percés for themselves, according to Major Haworth. Information was received from Arapaho and Cheyenne Indians, who visited Wash-

FIG. 296.

ington in 1880, that this sign is also used to designate the *Caddos*, who practiced the same custom of perforating the nasal septum. The same informants also state that the *Shawnees* are sometimes indicated by the same sign.

Pass the extended index, pointing toward the left, remaining fingers and thumb closed, in front of and across the upper lip, just below the nose. The second finger is also sometimes extended. (*Shoshoni and Banak* I.) "From the custom of piercing the noses for the reception of ornaments."

See p. 345 for remarks upon the signs for *Sahaptin*.

SATSIKA. See BLACKFEET.

SELISH. See FLATHEAD.

SHEEPEATER. See under SHOSHONI.

SHAWNEE. See remarks under SAHAPTIN.

SHOSHONI, or SNAKE.

The forefinger is extended horizontally and passed along forward in a serpentine line. (*Long.*)

Right hand closed, palm down, placed in front of the right hip; extend the index and push it diagonally toward the left front, rotating it quickly from side to side in doing so. (*Absaroka* I; *Shoshoni and Banak* I.) "Snake." Fig. 297.

FIG. 297.

Right hand, horizontal, flat, palm downward (W), advanced to the front by a motion to represent the crawling of a snake. (*Dakota* III.)

With the right index pointing forward, the hand is to be moved forward about a foot in a sinuous manner, to imitate the crawling of a snake. Also made by the Arapahos. (*Dakota* IV.)

Place the closed right hand, palm down, in front of the right hip; extend the index, and move it forward and toward the left, rotating the hand and finger from side to side in doing so. (*Kaiowa* I; *Comanche* II, III; *Apache* II; *Wichita* II.)

Make the motion of a serpent with the right finger. (*Kutine* I.)

Close the right hand, leaving the index only extended and pointing forward, palm to the left, then move it forward and to the left. (*Pai-Ute* I.) The rotary motion of the hand does not occur in this description, which in this respect differs from the other authorities.

———, Sheepeater. Tukuarikai.

Both hands, half closed, pass from the top of the ears backward, downward, and forward, in a curve, to represent a ram's horns; then, with the index only extended and curved, place the hand above and in front of the mouth, back toward the face, and pass it downward and backward several times. (*Shoshoni and Banak* I.) "Sheep," and "to eat."

SIHASAPA. See under DAKOTA.

SIOUX. See DAKOTA.

TENNANAH.

Right hand hollowed, lifted to mouth, and describing waving line gradually descending from right to left; left hand describing mountainous outline, one peak rising above the other. (*Kutchin* I.) "Mountain-river-men."

UTE.

"They who live on mountains" have a complicated sign which denotes "living in mountains," and is composed of the signs SIT and MOUNTAIN. (*Burton.*)

Rub the back of the extended flat left hand with the extended fingers of the right, then touch some black object. Represents black skin. Although the same sign is generally used to signify *negro*, an addition is sometimes made as follows: place the index and second fingers to the hair on the right side of the head, and rub them against each other to signify *curly hair*. This addition is only made when the connection would cause a confusion between the "black skin" Indian (*Ute*) and negro. (*Arapaho* II; *Cheyenne* V.)

Left hand horizontal, flat, palm downward, and with the fingers of the right hand brush the other toward the wrist. (*Dakota* III.)

Place the flat and extended left hand at the height of the elbow before the body, pointing to the front and right, palm toward the ground; then pass the palmar surface of the flat and extended fingers of the right hand over the back of the left from near the wrist toward the tips of the fingers. (*Kaiowa* I; *Comanche* III; *Apache* II; *Wichita* II.) "Those who use sinew for sewing, and for strengthening the bow."

Indicate the color *black*, then separate the thumbs and forefingers of both hands as far as possible, leaving the remaining fingers closed, and pass upward over the lower part of the legs. (*Shoshoni and Banak* I.) "Black or dark leggings."

WASAJI. See OSAGE.

WICHITA.

Indicate a circle over the upper portion of the right cheek, with the index or several fingers of the right hand. The statement of the Indian authorities for the above is that years ago the Wichita women painted spiral lines on the breasts, starting at the nipple and extending several inches from it; but after an increase in modesty or a change in the upper garment, by which the breast ceased to be exposed, the cheek has been adopted as the locality for the sign. (*Creel; Kaiowa* I; *Comanche* III; *Apache* II; *Wichita* II.)

Extend the fingers and thumb of the right hand, semi-closed, and bring the hand toward the face nearly touching it, repeating this several times as if going through the motion of tattooing. The Comanches call the Wichitas "Painted Faces"; Caddos call them "Tattoed Faces," both tribes using the same sign. (*Comanche* I.)

WYANDOT.

Pass the flat right hand from the top of the forehead backward over the head and downward and backward as far as the length of the arm. (*Wyandot* I.) "From the manner of wearing the hair."

PROPER NAMES.

WASHINGTON, CITY OF.

The sign for *go* by closing the hand (as in type position B 1) and bending the arm; the hand is then brought horizontally to the epigastrium, after which both the hand and arm are suddenly extended; the sign for *house* or *lodge;* the sign for *cars*, consisting of the sign for *go* and *wagon*, *e. g.*, both arms are flexed at a right angle before the chest; the hands then assume type position (L) modified by the index being hooked and the middle finger partly opened and hooked similarly; the hands are held horizontally and rotated forward side by side to imitate two wheels, palms upward; and the sign for *council* as follows: The right arm is raised, flexed at elbow, and the hand brought to the mouth (in type position G 1, modified by being inverted), palm up, and the index being more open. The hand then passes from the mouth in jerks, opening and closing successively; then the right hand (in position S 1), horizontal, marks off divisions on the left arm extended. The sign for *father* is briefly executed by passing the open hand down and from the loins, then bringing it erect before the body; then the sign for *cars*, making with the mouth the noise of an engine. The hands then raised before the eyes and approximated at points, as in the sign for *lodge;* then diverge to indicate *extensive;* this being followed by the sign for *council.* (*Oto and Missouri* I.) "The home of our father, where we go on the puffing wagon to council."

MISSOURI RIVER.

Make the sign for *water* by placing the right hand upright six or eight inches in front of the mouth, back outward, index and thumb crooked, and their ends about an inch apart, the other fingers nearly closed; then move it toward the mouth, and then downward nearly to the top of the breast-bone, at the same time turning the hand over toward the mouth until the little finger is uppermost; and the sign for *large* as follows: The opened right hands, palms facing, fingers relaxed and slightly separated, being at the height of the breast and about two feet apart, separate them nearly to arm's length; and then rapidly rotate the right hand from right to left several times, its back upward, fingers spread and pointing forward to show that it is stirred up or muddy. (*Dakota* IV.)

EAGLE BULL, a Dakota chief.

Place the clinched fists to either side of the head with the forefingers extended and curved, as in Fig. 298; then extend the left hand, flat, palm down, before the left side, fingers pointing forward; the outer edge of the flat and extended right hand is then laid transversely across the back of the left hand, and slid forward over the fingers as in Fig. 299. (*Dakota* VI; *Arikara* I.) "Bull

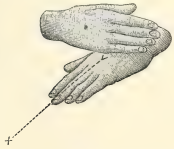

FIG. 299.

FIG. 298.

and eagle—'*Haliaëtus leucocephalus*, (*Linn.*) *Sav.*'" In the picture-writing of the Moquis, Fig. 300 represents the eagle's tail as showing the difference of color which is indicated in the latter part of the above gesture.

FIG. 300.

RUSHING BEAR, an Arikara chief.

Place the right fist in front of the right side of the breast, palm down; extend and curve the thumb and little finger so that their tips point toward one another before the knuckles of the remaining closed fingers, then reach forward a short distance and

pull toward the body several times rather quickly; suddenly push the fist, in this form, forward to arm's length twice. (*Dakota* VI; *Arikara* I.) "Bear, and rushing."

SPOTTED TAIL, a Dakota chief.

With the index only of the right hand extended, indicate a line or curve from the sacrum (or from the right buttock) downward, backward, and outward toward the right; then extend the left forefinger, pointing forward from the left side, and with the extended index draw imaginary lines transversely across the left forefinger. (*Absaroka* I; *Shoshoni* I; *Dakota* VI, VII; *Arikara* I.) "Tail, and spotted."

STUMBLING BEAR, a Kaiowa chief.

Place the right fist in front of the right side of the breast, palm down; extend and curve the thumb and little finger so that their tips point toward one another before the knuckles of the remaining closed fingers; then place the left flat hand edgewise before the breast, pointing to the right; hold the right hand flat pointing down nearer the body; move it forward toward the left, so that the right-hand fingers strike the left palm and fall downward beyond the left. (*Kaiowa* I.) "Bear, and stumble or stumbling."

SWIFT RUNNER, a Dakota warrior.

Place the right hand in front of the right side, palm down; close all the fingers excepting the index, which is slightly curved, pointing forward; then push the hand forward to arm's length twice, very quickly. (*Dakota* VI; *Arikara* I.) "Man running rapidly or swiftly."

WILD HORSE, a Comanche chief.

Place the extended and separated index and second fingers of the right hand astraddle the extended forefinger of the left hand. With the right hand loosely extended, held as high as and nearly at arm's length before the shoulder, make several cuts downward and toward the left. (*Comanche* III.) "Horse, and prairie or wild."

PHRASES.

President of the United States; Secretary of the Interior.

Close the right hand, leaving the thumb and index fully extended and separated; place the index over the forehead so that the thumb points to the right, palm toward the face; then draw the index across the forehead toward the right; then elevate the extended index, pointing upward before the shoulder or neck; pass it upward as high as the top of the head; make a short turn toward the front and pass it pointing downward toward the ground, to a point farther to the front and a little lower than at the beginning. (*Absaroka* I; *Dakota* VI, VII; *Shoshoni and Banak* I; *Ute* I; *Apache* I.) "White man and chief."

Make the sign for *white man* (American), by passing the palmar surface of the extended index and thumb of the right hand across the forehead from left to right, then that for *chief*, and conclude by making that for *parent* by collecting the fingers and thumb of the right hand nearly to a point and drawing them forward from the left breast. (*Kaiowa* I; *Comanche* III; *Apache* II; *Wichita* II.) "White man; chief; father."

Secretary of the Interior.

Draw the palmar side of the index across the forehead from left to right, resting the thumb upon the right temple, then make the sign for *chief*—the white chief, "Secretary;" then make the sign for *great lodge*, *council house*, by making the sign for *lodge*, then placing both hands somewhat bent, palms facing, about ten inches apart, and passing them upward from the waist as high as the face. (*Arikara* I.)

Where is your mother?

After placing the index into the mouth—*mother*, point the index at the individual addressed—*your*, then separate and extend the index and second fingers of the right hand; hold them, pointing forward, about twelve or fifteen inches before the face, and move them from side to side, eyes following the same direction—*I see*, then throw the flat right hand in a short curve outward to the right until the back points toward the ground—*not*, and look inquiringly at the individual addressed. (*Ute* I.) "Mother your I see not; where is she?"

Are you brave?

Point to the person and make sign for *brave*, at same time looking with an inquiring expression. (*Absaroka* I; *Shoshoni and Banak* I.)

BISON, I HAVE SHOT A.

Move the open left hand, palm to the front, toward the left and away from the body slowly (motion of the buffalo when chased). Move right hand on wrist as axis, rapidly (man on pony chasing buffalo); then extend left hand to the left, draw right arm as if drawing a bow, snap the forefinger and middle finger of left hand, and thrust the right forefinger over the left hand. (*Omaha* I.)

GIVE ME SOMETHING TO EAT.

Bring the thumb, index and second fingers to a point as if grasping a small object, the remaining fingers naturally extended, then place the hand just above the mouth and a few inches in front of it, and make repeated thrusts quickly toward the mouth several times; then place the naturally extended right hand nearly at arm's length before the body, palm up, fingers pointing toward the front and left, and make a short circular motion with the hand, as in Fig. 301, bringing the outer edge toward the body as far as the wrist will permit, throwing the hand forward again at a higher elevation. The motion being at the wrist only. (*Absaroka* I; *Dakota* VII, VIII; *Comanche* III.)

FIG. 301.

I WILL SEE YOU HERE AFTER NEXT YEAR.

Raise the right hand above the head (J 2), palm to the front, all the fingers closed except the index, hand slanting a little to backward, then move forward and downward toward the person addressed, describing a curve. (*Omaha* I.)

YOU GAVE US MANY CLOTHES, BUT WE DON'T WANT THEM.

Lean forward, and, holding the hands concavo-convex, draw them up over the limbs severally, then cross on the chest as wrapping a blanket. The arms are then extended before the body, with the hands in type-position (W), to a height indicating a large pile. The right hand then sweeps outward, showing a negative state of mind. The index of right hand finally touches the chest of the second party and approaches the body, in position (I), horizontal. (*Oto and Missouri* I.) "Something to put on that I don't want from you."

QUESTION. See also this title in EXTRACTS FROM DICTIONARY.

Hold the extended and flattened right hand, palm forward, at the height of the shoulder or face, and about fifteen inches from it, shaking the hand from side to side (at the wrist) as the arm is slightly raised, resembling the outline of an interrogation mark (?) made from below

upward. (*Absaroka* I; *Dakota* V, VI, VII; *Hidatsa* I; *Kaiowa* I; *Arikara* I; *Comanche* II, III; *Pai-Ute* I; *Shoshoni and Banak* I; *Ute* I; *Apache* I, II; *Wichita* II.)

——— What? What is it?

First attract the person's notice by the sign for *attention*, viz: The right hand (T) carried directly out in front of the body, with arm fully extended and there moved sidewise with rapid motions; and then the right hand, fingers extended, pointing forward or outward, fingers joined, horizontal, is carried outward, obliquely in front of the right breast, and there turned partially over and under several times. (*Dakota* I.)

——— What are you doing? What do you want?

Throw the right hand about a foot from right to left several times, describing an arc with its convexity upward, palm inward, fingers slightly bent and separated, and pointing forward. (*Dakota* IV.)

——— When?

With its index extended and pointing forward, back upward, rotate the right hand several times to the right and left, describing an arc with the index. (*Dakota* IV.)

——— What are you? *i. e.*, What tribe do you belong to?

Shake the upright open right hand four to eight inches from side to side a few times, from twelve to eighteen inches in front of the chin, the palm forward, fingers relaxed and a little separated. (*Dakota* IV.)

It must be remarked that in the three preceding signs there is no essential difference, either between themselves or between them and the general sign for QUESTION above given, which can be applied to the several special questions above mentioned. A similar remark may be made regarding several signs given below, which are printed in deference to collaborators.

Pass the right hand from left to right across the face. (*Kutine* I.)

——— What do you want?

The arm is drawn to front of chest and the hand in position (N 1), modified by palms being downward and hand horizontal. From the chest center the hand is then passed spirally forward toward the one addressed; the hand's palm begins the spiral motion with a downward and ends in an upward aspect. (*Oto* I.) "To unwind or open."

——— Whence come you?

First the sign for *you*, viz: The hand open, held upward obliquely, and pointing forward; then the hand extended open and drawn to the breast, and lastly the sign for *bringing*, as follows: The hand half shut, with the thumb pressing against the forefinger, being first mod-

erately extended either to the right or left, is brought with a moderate jerk to the opposite side, as if something was pulled along by the hand. (*Dunbar.*)

——— Who are you? or what is your name?

The right or left hand approximates close to center of the body; the arm is flexed and hand in position (D), or a little more closed. From inception of sign near center of body the hand slowly describes the arc of a quadrant, and fingers unfold as the hand recedes. We think the proper intention is for the inception of sign to be located at the heart, but it is seldom truly, anatomically thus located. (*Oto* I.) "To unfold one's self or make known."

——— Are you through?

With arms hanging at the side and forearms horizontal, place the fists near each other in front of body; then with a quick motion separate them as though breaking something asunder. (*Sahaptin* I.)

——— Do you know?

Shake the right hand in front of the face, a little to the right, the whole arm elevated so as to throw the hand even with the face, and the forearm standing almost perpendicular. Principal motion with hand, slight motion of forearm, palm out. (*Sahaptin* I.)

——— How far is it?

Sign for DO YOU KNOW? followed with a precise movement throwing right hand (palm toward face) to a position as far from body as convenient, signifying *far;* then with the same quick, precise motion, bring the hand to a position near the face—*near.* (*Sahaptin* I.)

——— How will you go—horseback or in wagon?

First make the sign for DO YOU KNOW? then throw right hand forward—"*go* or *going;* then throw fore and middle fingers of right astride the forefinger of the left hand, signifying, *will you ride?*; then swing the forefingers of each hand around each other, sign of *wheel running,* signifying, *or will you go in wagon?* (*Sahaptin* I.)

FIG. 302.

——— How many?

After making the sign for *question,* touch the tips of as many of the extended and separated fingers of the left hand held in front of the body upright, with back outward, with the right index as may be necessary. (*Dakota* I.) "Count them off to me—how many?"

Place the left hand carelessly before the breast, fingers extended and slightly separated, back to the front,

then count off a few with the extended index, by laying down the fingers of the left, beginning at the little finger, as in Fig. 302. In asking the question, the sign for *question* must precede the sign for *many*, the latter being also accompanied by a look of interrogation. (*Shoshoni and Banak* I.)

——— Has he?

Deaf-mute natural sign:

Move to and fro the finger several times toward the person spoken of (*Larson.*)

——— Have you?

Deaf-mute natural sign:

Move the finger to and fro several times toward the person to whom the one is speaking. (*Larson.*)

——— Are you?

Deaf-mute natural signs:

Point to the person spoken to and slightly nod the head, with an inquiring look. (*Ballard.*)

Point with the forefinger, as if to point toward the second person, at the same time nod the head as if to say "yes." (*Ziegler.*)

The following was obtained at Washington during the winter of 1880–'81 from Ta-ta^{n}-ka Wa-ka^{n} (Medicine Bull), a Brulé Dakota chief, by Dr. W. J. HOFFMAN.

I AM GOING HOME IN TWO DAYS.

(1) Place the flat hands in front of and as high as the elbows, palms down, pass each hand across to the opposite side of the body, the right above the left crossing near the wrist at the termination of the gesture (*night*), repeat in quick succession—*nights*, (2) elevate the extended index and second finger of the right hand, backs to the front—*two*, (3) place the tips of the extended and joined fingers of the right hand against the breast—*I*, (4) after touching the breast as in the preceding, pass the extended index from the breast, pointing downward, forward nearly to arm's length, and terminating by holding the hand but continuing the motion of the index until it points forward and upward—*am going to*, (5) throw the clinched right fist about six inches toward the earth at arm's length after the completion of the preceding gesture—*my home.*

ANALYSIS.

Ha^{n}-he'-pi	no^{n}'-pa	mi'-ye	ti-ya'-ta	wa-gle'-kta.
(1)	(2)	(3)	(5)	(4)
nights	two	I	my home	am going to.

It will be noticed that the gesture No. 4, "am going to," was made before the gesture No. 5, "my home," although the Dakota words pronounced were in the reverse order, showing a difference in the syntax of the gestures and of the oral speech in this instance. The other gestures, 1, 2, and 3, had been made deliberately, the Dakota word translating

each being in obvious connection with the several gestures, but the two final words were pronounced rapidly together as if they could not in the mind of the gesturer be applied separately to the reversed order of the signs for them.

The same authority obtained the above sentence in Ponka and Pani, together with the following signs for it, from individuals of those tribes. Those signs agreed between each other, but differed from the Dakota, as will be observed, in the signs *to my house*, as signifying *to my home.*

(1) Touch the breast with the tips of the extended fingers—*I.* This precedes the signs for Nos. 2, 3, 4, and 5, which correspond to Nos. 1, 2, 3, and 4 of the Dakota; then follows: (6) place the tips of the extended fingers of the flat hands together, leaving the wrists about six inches apart—*lodge*, (7) and conclude by placing the clinched fists nearly at arm's length before the body, the right several inches above the left, then throw them toward the ground—about six or eight inches—the fists retaining their relative positions—*my, mine.*

ANALYSIS.

The following is the Ponka sentence as given by the gesturer in connection with the several gestures as made:

....	Na^{a}′-ba	ja^{a} ɯi	a-ǵe′	ta miñ′-ke	ɥi	wi′-wi-a	tē′-ɥa.
(1)	(3)	(2)	(4)	(5)	(6)	(7)	

The following is the full sentence as spoken by Ponkas without regard to gesture, and its literal translation:

Na^{a}′-ba	ja^{a}	ɯī	a-ǵe′	ta′	miñ′-ke	ɥi	wi′-wi-ɥa	te′-ɥa	..
Two	night, sleep	ī, when	I go homeward	will	I who	lodge	my own	the, one, standing object,	to.

The Pani gestures were given with the accompanying words, viz:

(1)	Pit′ ku-rēt′	ka′-ha	wi	ta-tukh′-ta	a-ka′-ru	ru-rēt′-i-ru.
I	(3) (In) two	(2) nights	(4) I	(5) am going	(6) house	(7) to my.

The orthography in the above sentences, as in others where the original text is given (excepting the Dakota and Ojibwa), is that adopted by Maj. J. W. POWELL in the second edition of the *Introduction to the Study of Indian Languages. Washington*, 1880. The characters more particularly requiring explanation are the following, viz:

ǵ, as *th* in *then, though.*
ñ, as *ng* in *sing, singer;* Sp. *luengo.*
ɥ, an intermediate sound between *k* and *g* in *gig.*
kh, as the German *ch*, in *nacht.*
ʒ, an intermediate sound betwen *t* and *d.*
Nasalized vowels are written with a superior *n*, thus: a^{n}, e^{n}.

The following phrases were obtained by the same authority from Antonito, son of Antonio Azul, chief of the Pimas in Arizona.

I AM HUNGRY, GIVE ME SOMETHING TO EAT.

(1) Touch the breast with the tips of the extended fingers of the right hand—*I*, (2) place the outer edge of the flat and extended right hand against the pit of the stomach, palm upward, then make a sawing motion from side to side with the hand—*hunger*, (3) place the right hand before the face, back upward, and fingers pointing toward the mouth, then thrust the fingers rapidly to and from the mouth several times—*eat.*

ANALYSIS.

Aⁿ-an'-t	pi'-hu-ki'um	.....
(1)	(2)	(3)
I (have)	hunger	eat.

The last sign is so intimately connected with that for hunger, that no translation can be made.

GIVE ME A DRINK OF WATER.

(1) Place the tips of the index and thumb together, the remaining fingers curved, forming a cup, then pass it from a point abont six inches before the chin, in a curve upward, backward and downward past the mouth—*water*, (2) then place the flat right hand at the height of the elbow in front of or slightly to the right of the body, palm up, and in passing it slowly from left to right, give the hand a lateral motion at the wrist—*give me.*

ANALYSIS.

Shu'-wu-to	do'-i'.
(1)	(2)
water	give me.

The following was also obtained by Dr. W. J. HOFFMAN from Ta-taⁿ-ka Wa-kaⁿ, before referred to, at the time of his visit to Washington.

I AM GOING HOME.

(1) Touch the breast with the extended index—*I*, (2) then pass it in a downward curve, outward and upward toward the right nearly to arm's length, as high as the shoulder—*am going (to)*, (3) and when at that point suddenly clinch the hand and throw it edgewise a short distance toward the ground—*my country, my home.* Fig 303.

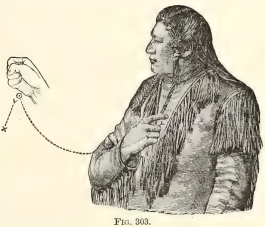

FIG. 303.

ANALYSIS.

Ma-ko'-ce		mi-ta'-wa		kin		e-kta'		wa-gle'		kta.
	(3)					(2)			(1)	
Country	‖	my own	‖	the	‖	to	‖	I go home	‖	will.

DIALOGUES.

TENDOY-HUERITO DIALOGUE.

The following conversation took place at Washington in April, 1880, between TENDOY, chief of the Shoshoni and Banak Indians of Idaho, and HUERITO, one of the Apache chiefs from New Mexico, in the presence of Dr. W. J. HOFFMAN. Neither of these Indians spoke any language known to the other, or had ever met or heard of one another before that occasion:

Huerito.—WHO ARE YOU?

Place the flat and extended right hand, palm forward, about twelve inches in front of and as high as the shoulder, then shake the hand from side to side as it is moved forward and upward—*question, who are you?* Fig. 304.

FIG. 304.

FIG. 305.

Tendoy.—SHOSHONI CHIEF.

Place the closed right hand near the right hip, leaving the index only extended, palm down; then pass the hand toward the front and left, rotating it from side to side—*Shoshoni*, Fig. 305; then place the closed hand, with the index extended and pointing upward, near the right cheek, pass it upward as high as the head, then turn it forward and downward toward the ground, terminating with the movement a little below the initial point—*chief.* Fig. 306.

Huerito.—HOW OLD ARE YOU?

Clinch both hands and cross the forearms before the breast with a trembling motion—*cold—winter, year*, Fig. 307; then elevate the left

hand as high as the neck and about twelve or fifteen inches before it, palm toward the face, with fingers extended and pointing upward; then, with the index, turn down one finger after another slowly, beginning at the little finger, until three or four are folded against the palm, and look inquiringly at the person addressed—*how many?* See Fig. 302.

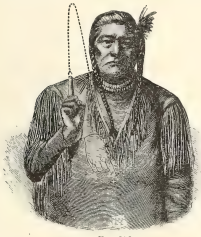

FIG. 306.

FIG. 307.

Tendoy.—FIFTY-SIX.

Close and extend the fingers and thumbs of both hands, with the palms forward, five times—*fifty*; then extend the fingers and thumb of the left

FIG. 308.

FIG. 309.

hand, close the right, and place the extended thumb alongside of and near the left thumb—*six*. Fig. 308.

Huerito.—VERY WELL. ARE THERE ANY BUFFALO IN YOUR COUNTRY?

Place the flat right hand, pointing to the left, with the palm down, against the breast-bone; then move it forward and slightly to the right and in an upward curve; make the gesture rather slow and nearly to arm's length (otherwise, *i. e.*, if made hastily and but a short distance,

it would only mean *good*)—*very good*, Fig. 309; place both closed hands to their respective sides of the head, palms toward the hair, leaving the forefingers curved—*buffalo*, see Fig. 298, p. 477; then reach out the fist to arm's length toward the west, and throw it forcibly toward the ground for a distance of about six inches, edge downward—*country, away to the west;* then point the curved index rather quickly and carelessly toward the person addressed—*your*.

Tendoy.—YES; MANY BLACK BUFFALO.

Pass the closed right hand, with the index partly flexed, to a position about eight inches before the right collar-bone, and, as the hand reaches that elevation, quickly close the index—*yes;* then make the same sign as in the preceding question for *buffalo;* touch the hair on the right side of the head with the palms of the extended fingers of the right hand—*black;* spread the curved fingers and thumbs of both hands, place them before either thigh, pointing downward; then draw them toward one another and upward as high as the stomach, so that the fingers will point toward one another, or may be interlaced—*many*. Fig. 310.

FIG. 310.

Tendoy.—DID YOU HEAR ANYTHING FROM THE SECRETARY? IF SO, TELL ME.

Close the right hand, leaving the index and thumb widely separated, pass it by the ear from the back of the ear downward and toward the chin, palm toward the head—*hear*, see Fig. 316, p. 492; point to the individual addressed—*you;* close the hand again, leaving the index and thumb separated as in the sign for *hear* and placing the palmar surface of the finger horizontally across the forehead, pointing to the left, allow the thumb to rest against the right temple; then draw the index across the forehead from left to right, leaving the thumb touching the head—*white man;* then place the closed hand, with elevated in

FIG. 311.

dex, before the right side of the neck or in front of the top of the shoulder; pass the index, pointing upward, as high as the top of the head; turn it forward and downward as far as the breast—*chief;* pass the extended index, pointing upward and forward, forward from the mouth twice—*talk;* then open and flatten the hand, palm up, outer edge toward the face, place it about fifteen inches in front of the chin, and draw it horizontally inward until the hand nearly touches the neck—*tell me.*

Huerito.—HE TOLD ME THAT IN FOUR DAYS I WOULD GO TO MY COUNTRY.

Close the right hand, leaving the index curved; place it about six inches from the ear and move it in toward the external meatus—*told me, hear, I heard,* Fig. 311; with the right hand still closed, form a circle with the index and thumb by allowing their tips to touch; pass the hand from east to west at arm's length—*day;* place the left hand before the breast, the fingers extended, and the thumb resting against the palm, back forward, and, with the index, turn down one finger after another, beginning at the little finger—*four;* touch the breast with the tips of the finger and thumb of the left hand collected to a point—*I;* drop the hand a short distance and move it forward to arm's length and slightly upward until it points above the horizon—*go to*;* then as the arm is extended, throw the fist edgewise toward the ground—*my country.*

Tendoy.—IN TWO DAYS I GO TO MY COUNTRY JUST AS YOU GO TO YOURS. I GO TO MINE WHERE THERE IS A GREAT DEAL OF SNOW, AND WE SHALL SEE EACH OTHER NO MORE.

Place the flat hands horizontally, about two feet apart, move them quickly in an upward curve toward one another until the right lies

FIG. 312.

FIG. 313.

across the left—*night,* Fig. 312, repeat this sign—*two nights* (literally *two sleeps hence*); point toward the individual addressed with the right

hand—*you;* and in a continuous movement pass the hand to the right, *i. e.*, toward the south, nearly to arm's length—*go;* then throw the fist edgewise toward the ground at that distance—*your country;* then touch the breast with the tips of the fingers of the left hand—*I;* move the hand off slowly toward the left, *i. e.*, toward the north to arm's length—*go to*;* and throw the clinched hand toward the ground—*my country;* then hold both hands toward the left as high as the head, palms down, with fingers and thumbs pendent and separated; move them toward the ground two or three times—*rain*, Fig. 313; then place the flat hands horizontally to the left of the body about two feet from the ground—*deep;* (literally, *deep rain*) *snow*—and raise them until about three feet from the ground—*very deep—much;* place the hands before the body about twelve inches apart, palms down, with forefingers only extended and pointing toward one another; push them toward and from one another several times—*see each other*, Fig. 314; then hold the flat right hand in front of the breast, pointing forward, palm to the left, and throw it over on its back toward the right—*not, no more.*

FIG. 314.

EXPLANATORY NOTE.—Where the asterisks appear in the above dialogue the preposition *to* is included in the gesture. After touching the breast for *I*, the slow movement forward signifies *going to*, and *country* is signified by locating it at arm's length toward the west, to the left of the gesturer, as the stopping-place, also *possession* by the clinched fist being directed toward the ground. It is the same as for *my* or *mine*, though made before the body in the latter signs. The direction of Tendoy's hands, first to the south and afterwards to the north, was understood not as pointing to the exact locality of the two parts of the country, but to the difference in their respective climates.

OMAHA COLLOQUY.

The following is contributed by Rev. J. OWEN DORSEY:

Question. FROM WHAT QUARTER IS THE WIND?

Raise the curved right hand, palm in, in front of the left shoulder. Draw in toward the body a little, then from the body several times in different directions.

Answer. FROM THAT QUARTER.

Hand as above; draw in towards the body *once*, and *farther* with *emphasis*, according to the direction of the wind.

BRULÉ DAKOTA COLLOQUY.

The following signs, forming a question and answer, were obtained by Dr. W. J. HOFFMAN, from Ta-ta^{a}-ka Wa-ka^{a} (Medicine Bull), a Brulé Dakota chief who visited Washington during the winter of 1880–'81:

Question. WE WENT TO THE DEPARTMENT [OF THE INTERIOR], SHOOK HANDS WITH THE SECRETARY AND HAD A CONVERSATION WITH HIM, DID YOU HEAR OF IT?

(1) Extend and separate the thumb and index, leaving the remaining fingers closed, place the ball of the thumb against the temple above the outer corner of the eye, and the index across the forehead, the tip resting on the left temple, then draw the index across to the right until its tip touches the thumb—*white man*, Fig. 315; (2) Elevate the extended index before the shoulder, palm forward, pass it upward, as high as the head, and forming a short curve to the front, then downward again slightly to the front to before the breast and about fifteen inches from it—*chief*; (3) Fingers of both hands extended and separated; then interlace them so that the tips of the fingers of one hand protrude beyond the backs of those of the opposing one; hold the hands in front of the breast, pointing upward, leaving the wrists about six inches apart—*lodge;* (4) Place the left hand a short distance before the breast, palm down and slightly arched, fingers directed toward the right and front, then pass the flat and extended right hand forward, under and beyond the left, forming a downward curve, the right hand being as high as the left at the commencement and termination of the gesture—*enter, entered;* (5) Clasp the hands before the body, left uppermost—*shook hands, friendly;* (6) Place the flat right hand before the chin, palm up with fingers directed to the left, then pass the hand forward several times—*talk, talked to him;* (7) Reverse this motion, beginning away from the body, drawing the hand edgewise toward the chin several times—*talked to me;* (8) Separate the extended thumb and index as far as possible, leaving the remaining fingers closed, place the hand about six inches opposite the right ear, palm toward the head, then pass it in a curve forward and downward, terminating at the height of the elbow—*hear, heard;* (9) then in a continuous movement direct the extended index at the individual addressed, the face expressing a look of inquiry—*you.*

FIG. 315.

ANALYSIS.

Wa-si′-ĉu^{n}	i-ta^{n}-ca^{n}	ti-el′	ti′-ma-hel	unk-i′-pi	na
(1)	(2)		(3)	(4)	
White man	chief	lodge in	lodge within	we were at that place	and

na′-pe-u^{n}-za-pi	na	ki-ci	wo-un-gla-ka-pi	ki^{n}
(5)			(6, 7)	
hand we hold it, take hold of	and	to each other	we talk	the thing

na-ya-ḣo^{n}-hu-o
(8, 9)
you hear it?

It will be observed that the interrogation point is placed under the last syllable, hu-o, the latter implying a question, though the gesture was not made to accompany it, the gestures for *hear* and *you*, with a look of inquiry, being deemed sufficient to express the desire on the part of the speaker.

FIG. 316.

Answer. YES, I HEARD OF IT, BUT DID NOT SEE IT.

(1) Hold the naturally closed hand before the right side of the breast or shoulder, leaving the index and thumb loosely extended, then, as the hand is thrown downward and forward, bring the index against the inner side of the thumb—*yes.* (2) Repeat gesture No. 8—*heard*, Fig. 316; (3) pass the extended index forward from the right eye—*saw*; (4) then in a continuous motion extend all the fingers so as to place the flat hand edgewise, and pointing forward about twelve inches before the right side of the breast, and throw it outward and slightly downward—*no*, *not.*

ANALYSIS.

Ha-u,	na-wa′-ḣo^{n}	tka	wa^{n}-mla′-ke	śni
(1)	(2)		(3)	(4)
Yes,	I heard	(but)	I saw it.	not.

DIALOGUE BETWEEN ALASKAN INDIANS.

The following introductory notes are furnished by Mr. IVAN PETROFF, who contributes the Dialogue:

It has been repeatedly stated that among the natives of Alaska no trace of gesture or sign language can be found. The universal spread

of the Russian language in former times as a medium of trade and general intercourse has certainly prevented observations of this primitive linguistic feature in all the vast regions visited by the Russians. On the other hand, the homogeneous elements of the Innuit tongue, spoken along the whole seacoast from the Arctic to the Alaskan Peninsula, and the Island of Kadiak, has, to a great extent, abolished all causes for the employment of sign language between tribes in their mutual intercourse. Basing their opinions upon what they saw while touching upon the coast here and there, even the acknowledged authorities on Alaskan matters have declared that sign language did not and could not exist in all that country. Without entering into any lengthened dispute upon this question, I venture to present in the subjoined pages a succinct account of at least one instance where I saw natives of different tribes converse with each other only by means of signs and gestures within the boundaries of Alaska.

In the month of September, 1866, there arrived on the Lower Kinnik River, a stream emptying its waters into Cook's Inlet, two Indians from a distant region, who did not speak the Kenaitze language. The people of the settlement at which the strangers made their first appearance were equally at a loss to understand the visitors. At last a chief of great age, bearing the name of Chatidoolts (mentioned by Vancouver as a youth), was found to be able to interpret some of the signs made by the strangers, and after a little practice he entered into a continued conversation with them in rather a roundabout way, being himself blind. He informed me that it was the second or third time within his recollection that strangers like those then present had come to Kinnik from the northeast, but that in his youth he had frequently "talked with his hands" to their visitors from the west and east. He also told me that he had acquired this art from his father, who, as the old man expressed himself, had "seen every country, and spoken to all the tribes of the earth." The conversation was carried on with the help of the old man's sons, who described to their blind parent the gestures of the strangers, and were instructed in turn by him with what gestures to reply.

This being an entirely new experience to me I at once proceeded to carefully make notes of the desultory talk, extending over several days. My object, primarily, was to make use of the signs for purposes of trade in the future.

The notes thus obtained contain a narrative of the two strangers, interpreted to me at the time by Chatidoolts. I shall present each sign or sentence as I noted it at the time, with only casual reference to that incomplete and frequently erroneous interpretation.

The two Indians wore the pointed hunting shirt of tanned moose-skin, ornamented with beads and fringes which is still common to the Kutchin tribes. They were not tattooed, but ears and noses were encumbered with pendants of dentalium and a small red glass bead. Their feet were

clothed in moccasins. One of them had a rifle of English manufacture, and his companion carried two huge knives, one of them of copper evidently of native manufacture.

(1) *Kenaitze.*—Left hand raised to height of eye, palm outward, moved several times from right to left rapidly; fingers extended and closed; pointing to strangers with left hand. Right hand describes a curve from north to east—*Which of the northeastern tribes is yours?*

(2) *Tennanah.*—Right hand, hollowed, lifted to mouth, then extended and describing waving line gradually descending from right to left. Left hand describing mountainous outline, apparently one peak rising above the other, said by Chatidoolts to mean—*Tenan-tnu-kohtana, Mountain-river-men.*

(3) *K.*—Left hand raised to height of eye, palm outward, moved from right to left, fingers extended. Left index describes curve from east to west. Outline of mountain and river as in preceding sign—*How many days from Mountain-river?*

(4) *T.*—Right hand raised toward sky, index and thumb forming first crescent and then ring. This repeated three times—*moon, new and full three times.*

(5) Right hand raised, palm to front, index raised and lowered at regular intervals—*walked.* Both hands imitating paddling of canoe, alternately right and left—*traveled three months on foot and by canoe.*

(6) Both arms crossed over breast, simulating shivering—*cold, winter.*

(7) Right index pointing toward speaker—*I.* Left hand pointing to the west—*traveled westward.*

(8) Right hand lifted cup-shaped to mouth—*water.* Right hand describing waving line from right to left gradually descending, pointing to the west—*river running westward.*

(9) Right hand gradually pushed forward, palm upward, from height of breast. Left hand shading eyes; looking at great distance—*very wide.*

(10) Left and right hands put together in shape of sloping shelter—*lodge, camp.* See Fig. 259, on p. 431.

(11) Both hands lifted, height of eye, palm inward, fingers spread—*many times.*

(12) Both hands closed, palm outward, height of hips—*surprised.*

(13) Index pointing from eye forward—*see.*

(14) Right hand held up, height of shoulder, three fingers extended, left hand pointing to me—*three white men.*

(15) *K.*—Right hand pointing to me, left hand held up, three fingers extended—*three white men.*

(16) Making Russian sign of cross—*Russians. Were the three white men Russians?*

(17) *T.*—Left hand raised, palm inward, two fingers extended, sign of cross with right—*two Russians.*

(18) Right hand extended, height of eye, palm outward, moved outward a little to right—*no.*

(19) One finger of left hand raised—*one.*

(20) Sign of cross with right—*Russian.*

(21) Right hand height of eye, fingers closed and extended, palm outward a little to right—*no.*

(22) Right hand carried across chest, hand extended, palm upward, fingers and thumb closed as if holding something. Left hand in same position carried across the right, palm downward—*trade.*

(23) Left hand upholding one finger, right pointing to me—*one white man.*

(24) Right hand held horizontally, palm downward, about four feet from ground—*small.*

(25) Forming rings before eyes with index and thumb—*eye-glasses.*

(26) Right hand clinched, palm upward, in front of chest, thumb pointing inward—*gave one.*

(27) Forming cup with right hand, similating drinking—*drink.*

(28) Right hand grasping chest repeatedly, fingers curved and spread—*strong.*

(29) Both hands pressed to temple and head moved from side to side—*drunk, headache.*

(30) Both index fingers placed together, extended, pointing forward—*together.*

(31) Fingers interlaced repeatedly—*build.*

(32) Left hand extended, fingers closed, pointing outward (vertically), right hand extended, fingers closed, placed slopingly against left—*camp.*

(33) Both wrists placed against temples, hands curved upward and outward, fingers spread—*horns.*

(34) Both hands horizontally lifted to height of shoulder, right arm extended gradually full length to the right, hand drooping a little at the end—*long back, moose.*

(35) Both hands upright, palm outward, fingers extended and spread, placing one before the other alternately—*trees, forest, dense forest.*

(36) Sign of cross—*Russian.*

(37) Motions of shooting a gun—*shot.*

(38) Sign for *moose* (Nos. 33, 34), showing two fingers of left hand—*two.*

(39) Sign for *camp* as before (No. 10) *camp.*

(40) Right hand describing curve from east to west, twice—*two days.*

(41) Left hand lifted height of mouth, back outward, fingers closed as if holding something; right hand simulating motion of tearing off and placing in mouth—*eating moose meat.*

(42) Right hand placed horizontally against heart, fingers closed, moved forward a little and raised a little several times—*glad at heart.*

(43) Fingers of left hand and index of right hand extended and placed together horizontally, pointing forward, height of chest. Hands separated, right pointing eastward and left westward—*three men and speaker parted, going west and east.*

(44) Pressing both arms against chest and shivering—*very cold.*

(45) Drawing index of each hand around corresponding legs below the knee—*deep snow.*

(46) Drawing imaginary line with index of right hand across each foot, just behind the toes—*snow shoes.*

(47) Head lowered to right side into palm of hand three times—*slept three times.*

(48) Sign for *camp*, as before (No. 10)—*camp.*

(49) Pointing to speaker—*I.*

(50) Fingers of right hand extended and joined and pointed forward from mouth, left hand lowered horizontally to a foot from the ground —*fox.*

(51) Left hand raised height of eye, back to the left, fingers closed, with exception of middle finger held upright; then middle finger suddenly closed—*trap.*

(52) Both hands lifted height of eye, palm inward, fingers spread—*many.*

(53) Right hand pointing to speaker—*I.*

(54) Sign for *trap* (No. 51), as above—*trap.*

(55) Right hand lowered to within a few inches of the ground and moved from left to right about two feet. Motions of both hands descriptive of playful jumping of marten around a tree or stump—*marten.*

(56) Holding up the fingers of both hands three times until aggregating thirty—*thirty.*

(57) Left forearm held up vertically, palm to front, fingers spread—*tree.*

(58) Motion of chopping with hatchet—*cut.*

(59) Driving invisible wedge around small circle—*peeling birch bark.*

(60) Right hand, fingers extended and joined, moved slowly from left to right horizontally while blowing upon it with mouth—*pitching seams of canoe.*

(61) Motions of using paddle very vigorously—*paddle up stream.*

(62) Lifting both arms above head on respective sides, hands closed as if grasping something and lifting the body—*poling canoe.*

(63) Sign for *moon* (No. 4), (crescent and ring) once—*one month.*

(64) Right hand vertically, height of chest, palm to left, fingers extended, closed. Left hand horizontally, palm downward, pushed against right—*stopped.*

(65) Right hand, index extended, drawing outline of mountains, one above other—*high mountains.*

(66) Left hand lifted to left shoulder, back to front, fingers bent and closed. Right hand, fingers bent and closed, placed over left and then slowly drawn across chest to right shoulder. Motion with both hands as if adjusting pack—*pack, knapsack.*

(67) Sign for *water* as before (No. 8). Both hands brought forward, palms down, arms passed outward horizontally to respective sides, palms down—*lake.* Both hands describing circular line backward until touching collar bone—*big and deep.*

(68) Left hand raised slightly about height of nipple, three fingers closed; index and thumb holding tip of index of right hand. Both hands moved across chest from left to right—*beaver.**

(69) Previous sign for *many* (No. 52) repeated several times—*very plentiful.*

(70) Both hands held up with fingers spread, palm forward, twice and left hand once—height of eye—*twenty-five.*

(71) Pointing to himself—*I.*

(72) Sign for *trap* as before (No. 51)—*trapped.*

(73) Sign for temporary *shelter* (No. 10)—*camped.*

(74) Sign for new and full moon (No. 4), once—*one month.*

(75) Right hand passed slowly over the hair and chin. Left hand touching a pendant of white beads—*old man.*

(76) Index of right hand held up—*one.*

(77) Both hands partially closed and placed against breast, back of hands to front, a few inches apart—*women.*

(78) Index and middle finger of right hand held up, palm forward; eyes directed as if counting—*two.*

(79) Sign for *trap* as before (No. 51)—*trapping.*

(80) Left forearm vertically in front of chest, palm of hand to front, fingers spread, elbow resting upon the back of the right hand—*tree.*

(81) Arms and hands spanning imaginary tree of some size—*big.*

(82) Sign for *tree* as before (No. 57), left forearm suddenly brought down across extended right hand—*fell.*

(83) Right hand laid on top of head, then passed over the hair and chin, left hand touching white beads—*on the head of the old man.*

(84) Sign for *old man* as before (No. 75)—*old man.*

(85) Closing both eyes with fore and middle finger of right hand; both hands placed side by side, horizontally, palms downward, fingers extended and united, hands separated by slow horizontal movement to right and left—*dead.*

(86) Sign for *women* as before (No. 77)—*women.*

(87) Fingers of both hands interlaced at right angles several times—*built.*

(88) Sign for *lodge* as before (No. 10)—*lodge.*†

(89) Right index describing circle around the head, height of eye (cutting hair). Right hand passed over forehead and face. Left index pointing to black scabbard (blacking faces)—*mourning.*

(90) Index and middle finger of right hand passed from eyes downward across cheeks—*weeping.*

(91) Pointing to himself—*I.*

(92) Make the signs for *shoot* (Nos. 33, 34), and *moose* (No. 37)—*shot a moose.*

(93) Left hand extended horizontally, palm upward, right hand placed across left vertically, about the middle—*divided in two.*

(94) Right hand closed, palm downward, moved forward from right breast the length of the arm and then opened—*I gave.*

(95) Sign for *women* (No. 77)—*to women.*

(96) Right hand, palm down, pointing to left, placed horizontally before heart and slightly raised several times—*good and glad.*

(97) Pointing to his companion—*he.*

(98) Motion of *paddling—in canoe.*

(99) Right arm and hand extended in N. E. direction, gradually curved back until index touches speaker—*came to me from the northeast.*

(100) Sign for *together* as above (No. 30)—*together.*

(101) Motion of *paddling—paddled.*

(102) Pointing to ground—*to this place.*

(103) *K.* Motion of drinking water out of hand—*water.*

(104) Describing circle with right index on palm of left hand extended horizontally—*lake.*

(105) Left hand raised to height of eye, palm to front, fingers leaning slightly backward. Fingers of left hand closed alternately—*how many?*

(106) *T.* Holding up right hand back to front, showing four fingers, eyes looking at them as if counting—*four.*

(107) Sign for packing with wooden breast-brace as above; three fingers of right hand shown as above—*three portages.*

(108) *K.* Right hand pointing to gun of stranger—*gun.* Left hand raised height of eye, palm to front, and moved rapidly several times to right and left—*interrogation.*

(109) Sign for *trade* as before (No. 22)—*trade; i. e., where did you buy the gun?*

(110) *T.* Sign for *Mountain-river* as above (No. 2). Pointing eastward—*from the eastward.*

(111) Pointing to sun and then raising both hands, backs to front, fingers spread—*ten days.*

(112) Pointing to me—*white man.*

(113) Left hand held up vertically, palm outward, fingers joined. Right index placed horizontally across fingers of left hand in front, about the middle joint—*pallisaded.*

(114) Describing square with right index on flat palm of left hand—*building.*

(115) Pointing to his gun, powder-horn, blanket, and beads—*trading goods.*

(116) Both hands horizontal, brought forward and upward from chest and then downward—*plenty.*

* Chatidoolts explained this to his sons as well as to me, saying that the mountain men had a peculiar mode of catching beavers with long sticks.

†They never occupy a house in which one of the other Indians died.

In giving this narrative I have observed the original sequence, but there were frequent interruptions, caused by consultation between Chatidoolts and his sons, and before the strangers departed again they had obtained a knowledge of some words of the Kenaitze language.

OJIBWA DIALOGUE.

[Communicated by the Very Rev. EDWARD JACKER.]

The following short dialogue forms part of the scanty tradition the civilized Ojibwas possess regarding their ancestors' sign language:

Two Indians of different tongue meet on a journey. First Indian points to second Indian with the outstretched forefinger of the right hand, bringing it within a few inches of his breast; next he extends both forearms horizontally, clinches all but the forefingers, and bends the hands inward; then he brings them slowly and in a straight line together, until the tips of the outstretched forefingers meet. This gesture is accompanied with a look of inquiry—*You met somebody?*

Second Indian, facing the south, points to the east, and with the outstretched hand forms a half circle from east to west (corresponding to the the daily course of the sun); then he raises the arm and points to a certain height above the southern horizon. Then the sign for *meeting* (as above) may be made, or omitted. After this he bends the right hand downward, and repeatedly moves the outstretched forefinger and middle finger in opposite directions (in imitation of the motion of the legs in the act of walking). Finally he raises the right hand and stretches up the forefinger (or several fingers). *To-day, when the sun stood at such a height, I met one (or several) persons traveling on foot.* If the travelers met were on horseback he makes the sign for *horse* as described by (*Dakota* III), see EXTRACTS FROM DICTIONARY, or the identical one for *going* given by (*Ojibwa* I), which is as follows: To describe a journey on horseback the first two fingers of the right hand are placed astride of the forefinger of the left hand, and both represent the galloping movement of a horse. If it is a foot journey, wave the two fingers several times through the air.

NARRATIVES.

The following, which is presented as a good descriptive model, was obtained by Dr. W. J. HOFFMAN, of the Bureau of Ethnology, from Natci, a Pai-Ute chief connected with the delegation of that tribe to Washington in January, 1880, and refers to an expedition made by him by direction of his father, Winnimukka, Head Chief of the Pai-Utes, to the northern camp of his tribe, partly for the purpose of preventing the hostile outbreak of the Banaks which occurred in 1878, and more particularly to prevent those Pai-Utes from being drawn into any difficulty with the United States by being leagued with the Banaks.

NATCI'S NARRATIVE.

(1) Close the right hand, leaving the index extended, pointed westward at arm's length a little above the horizon, head thrown back with the eyes partly closed and following the direction—*Away to the west*, (2) indicate a large circle on the ground with the forefinger of the right hand pointing downward—*place* (locative), (3) the tips of the spread fingers of both hands placed against one another, pointing upward before the body, leaving a space of four or five inches between the wrists —*house* (brush tent or wik'-i-up), see Fig. 257, p. 431, (4) with the right hand closed, index extended or slightly bent, tap the breast several times—*mine.* (5) Draw an imaginary line, with the right index toward the ground, from some distance in front of the body to a position nearer to it—*from there I came*, (6) indicate a spot on the ground by quickly raising and depressing the right hand with the index pointing downward—*to a stopping place*, (7) grasp the forelock with the right hand, palm to the forehead, and raise it about six inches, still holding the hair upward—*the chief of the tribe* (Winnimukka), see Fig. 245, p. 418, (8) touch the breast with the index—*me*, (9) the right hand held forward from the hip at the level of the elbow, closed, palm downward, with the middle finger extended and quickly moved up and down a short distance—*telegraphed*, (10) head inclined toward the right, at the same time making movement toward and from the ear with the extended index pointing toward it—*I heard*, *i. e.*, understood.

(11) An imaginary line indicated with the extended and inverted index from a short distance before the body to a place on the right—*I went*, (12) repeat gesture No. 6—*a stopping place*, (13) inclining the head, with eyes closed, toward the right, bring the extended right hand, palm up, to within six inches of the right ear—*where I slept.* (14) Place the spread and extended index and thumb of the right hand, palm downward, across the right side of the forehead—*white man* (American), (15)

elevating both hands before the breast, palms forward, thumbs touching, the little finger of the right hand closed—*nine*, (16) touch the breast with the right forefinger suddenly—*and myself*, (17) lowering the hand, and pointing downward and forward with the index still extended (the remaining fingers and thumb being loosely closed) indicate an imaginary line along the ground toward the extreme right—*went*, (18) extend the forefinger of the closed left hand, and place the separated fore and second fingers of the right astraddle the forefinger of the left, and make a series of arched or curved movements toward the right—*rode horseback*, (19) keeping the hands in their relative position, place them a short distance below the right ear, the head being inclined toward that side—*sleep*, (20) repeat the signs for *riding* (No. 18) and *sleeping* (No. 19) three times—*four days and nights*, (21) make sign No. 18, and stopping suddenly point toward the east with the extended index-finger of the right (others being closed) and follow the course of the sun until it reaches the zenith—*arrived at noon of the fifth day.*

(22) Indicate a circle as in No. 2—*a camp*, (23) the hands then placed together as in No. 3, and in this position, both moved in short irregular upward and downward jerks from side to side—*many wik'-i-ups*, (24) then indicate the chief of the tribe as in No. 7—meaning that *it was one of the camps of the chief of the tribe.* (25) Make a peculiar whistling sound of "phew" and draw the extended index of the right hand across the throat from left to right—*Banak*, (26) draw an imaginary line with the same extended index, pointing toward the ground, from the right to the body—*came from the north*, (27) again make gesture No. 2—*camp*, (28) and follow it twice by sign given as No. 18 (forward from the body, but a short distance)—*two rode.* (29) Rub the back of the right hand with the extended index of the left—*Indian, i. e.*, the narrator's own tribe, Pai-Ute, (30) elevate both hands side by side before the breast, palms forward, thumbs touching, then, after a short pause, close all the fingers and thumbs except the two outer fingers of the right hand—*twelve*, (31) again place the hands side by side with fingers all spread or separated, and move them in a horizontal curve toward the right—*went out of camp*, (32) and make the sign given as No. 25—*Banak*, (33) that of No. 2—*camp*, (34) then join the hands as in No. 31, from the right toward the front—*Pai-Utes returned*, (35) close the right hand, leaving the index only extended, move it forward and downward from the mouth three or four times, pointing forward, each time ending the movement at a different point—*I talked to them*, (36) both hands pointing upward, fingers and thumbs separated, palms facing and about four inches apart, held in front of the body as far as possible in that position—*the men in council*, (37) point toward the east with the index apparently curving downward over the horizon, then gradually elevate it to an altitude of 45°—*talked all night and until nine o'clock next morning*, (38) bring the closed hands, with forefingers extended, upward and forward from their respective sides, and place them side by side, palms forward, in front—

my brother, Fig. 317, (39) (see also pp. 385, 386) followed by the gesture, No. 18, directed toward the left and front—*rode*, (40) by No. 7—*the head chief*, (41) and No. 2—*camp*.

(42) Continue by placing the hands, slightly curved, palm to palm, holding them about six inches below the right ear, the head being inclined considerably in that direction—*one sleep* (*night*), (43) make sign No. 14—*white man*, (44) raise the left hand to the level of the elbow forward from the left hip, fingers pointing upward, thumb and forefinger closed—*three*, (45) and in this position draw them toward the body and slightly to the right—*came*, (46) then make gesture No. 42—*sleep;* (47) point with the right index to the eastern horizon—*in the morning*, (48) make sign No. 14—*white man*, (49) hold the left hand nearly at arm's length before the body, back up, thumb and forefinger closed, the remaining fingers pointing downward—*three*, (50) with the right index finger make gesture No. 35, the movement being directed towards the left hand—*talked to them*, (51) motion along the ground with the left hand, from the body toward the left and front, retaining the position of the fingers just stated (in No. 49)—*they went*, (52) tap toward the ground, as in gesture No. 6, with the left hand nearly at arm's length—*to their camp*.

Fig. 317.

(53) Make gesture No. 18 toward the front—*I rode*, (54) extend the right hand to the left and front, and tap towards the earth several times as in sign No. 6, having the fingers and thumb collected to a point—*camp of the white men*. (55) Close both hands, with the forefingers of each partly extended and crooked, and place one on either side of the forehead, palms forward—*cattle* (a steer), (56) hold the left hand loosely extended, back forward, about twenty inches before the breast, and strike the back of the partly extended right hand into the left—*shot*, (57) make a short upward curved movement with both hands, their position unchanged, over and downward toward the right—*fell over, killed*, (58) then hold the left hand a short distance before the body at the height of the elbow, palm downward, fingers closed, with the thumb lying over the second joint of the forefinger, extend the flattened right hand, edge down, before the body, just by the knuckles of the left, and draw the hand towards the body, repeating the movement—*skinned*, (59) make the sign given in No. 25—*Banak*, (60) place both hands with spread fingers upward and palms forward, thumb to thumb, before the right shoulder, moving them with a tremulous motion toward the left and front—*came in*, (61) make three short movements toward the ground in front, with the left hand, fingers loosely curved, and pointing downward—*camp of the three white men*, (62) then with the right hand open and flattened, edge down, cut towards the body as well as to the right and left—*cut up the meat*, (63) and make the pantomimic gesture of *handing it around to the visitors*.

(64) Make sign No. 35, the movement being directed to the left hand,

as held in No. 49—*told the white men*, (65) grasping the hair on the right side of the head with the left hand, and drawing the extended right hand with the edge towards and across the side of the head from behind forward—*to scalp ;* (66) close the right hand, leaving the index partly extended, and wave it several times quickly from side to side a short distance before the face, slightly shaking the head at the same time—*no*, Fig. 318, (67) make gesture No. 4—*me*, (68) repeat No. 65—*scalp*, (69) and raising the forelock high with the left hand, straighten the whole frame with a triumphant air—*make me a great chief.* (70) Close the right hand with the index fully extended, place the tip to the mouth and direct it firmly forward and downward toward the ground—*stop*, (71) then placing the hands, pointing upward, side by side, thumbs touching, and all the fingers separated, move them from near the breast outward toward the right, palms facing that direction at termination of movement—*the Banaks went to one side*, (72) with the right hand closed, index curved, palm downward, point toward the western horizon, and at arm's length dip the finger downward—*after sunset*, (73) make the gesture given as No. 14—*white men*, (74) pointing to the heart as in No. 4—*and I*, (75) conclude by making gesture No. 18 from near body toward the left, four times, at the end of each movement the hands remaining in the same position, thrown slightly upward—*we four escaped on horseback.*

FIG. 318.

The above was paraphrased orally by the narrator as follows: "Hearing of the trouble in the north, I started eastward from my camp in Western Nevada, when, upon arriving at Winnemucca Station, I received telegraphic orders from the head chief to go north to induce our bands in that region to escape the approaching difficulties with the Banaks. I started for Camp McDermit, where I remained one night. Leaving next morning in company with nine others, we rode on for four days and a half. Soon after our arrival at the Pai-Ute camp, two Banaks came in, when I sent twelve Pai-Utes to their camp to ask them all to come in to hold council. These messengers soon returned, when I collected all the Pai-Utes and talked to them all night regarding the dangers of an alliance with the Banaks and of their continuance in that locality. Next morning I sent my brother to the chief, Winnimukka, with a report of proceedings.

"On the following day three white men rode into camp, who had come up to aid in persuading the Pai-Utes to move away from the border. Next morning I consulted with them respecting future operations, after which they went away a short distance to their camp. I then followed them, where I shot and killed a steer, and while skinning it the Banaks came in, when the meat was distributed. The Banaks being disposed to become violent at any moment, the white men became alarmed, when

I told them that rather than allow them to be scalped I would be scalped myself in defending them, for which action I would be considered as great a chief as Winnemukka by my people. When I told the Banaks to cease threatening the white men they all moved to one side a short distance to hold a war council, and after the sun went down the white men and I mounted our horses and fled toward the south, whence we came."

Some of the above signs seem to require explanation. Natci was facing the west during the whole of this narration, and by the right he signified the north; this will explain the significance of his gesture to the right in Nos. 11 and 17, and to the left in No. 75.

No. 2 (repeated in Nos. 22, 27, 33, and 41) designates an Indian brush lodge, and although Natci has not occupied one for some years, the gesture illustrates the original conception in the round form of the foundation of poles, branches, and brush, the interlacing of which in the construction of the *wik'-i-up* has survived in gestures Nos. 3 and 23 (the latter referring to more than one, *i. e.*, an encampment).

The sign for Banak, No. 25 (also 32 and 59), has its origin from the tradition among the Pai-Utes that the Banaks were in the habit of cutting the throats of their victims. This sign is made with the index instead of the similar gesture with the flat hand, which among several tribes denotes the Sioux, but the Pai-Utes examined had no specific sign for that body of Indians, not having been in sufficient contact with them.

"A stopping place," referred to in Nos. 6, 12, 52, and 54, represents the temporary station, or camp of white men, and is contradistinguished from a village, or perhaps from any permanent encampment of a number of persons, by merely dotting toward the ground instead of indicating a circle.

It will also be seen that in several instances, after indicating the nationality, the fingers previously used in representing the number were repeated without its previously accompanying specific gesture, as in No. 61, where the three fingers of the left hand represented the men (white), and the three movements toward the ground signified the camp or tents of the three (white) men.

This also occurs in the gesture (Nos. 59, 60, and 71) employed for the Banaks, which, having been once specified, is used subsequently without its specific preceding sign for the tribe represented.

The rapid connection of the signs Nos. 57 and 58 and of Nos. 74 and 75 indicates the conjunction, so that they are severally readily understood as "shot *and* killed," and "the white men *and* I." The same remark applies to Nos. 15 and 16, "the nine *and* I."

PATRICIO'S NARRATIVE.

This narrative was obtained in July, 1880, by Dr. FRANCIS H. ATKINS, acting assistant surgeon, United States Army, at South Fork, New Mexico, from TI-PE-BES-TLEL (Sheepskin-leggings), habitually called Patricio, an intelligent young Mescalero Apache. It gives an account of what is locally termed the "April Round-up," which was the disarming and imprisoning by a cavalry command of the United States Army, of the small Apache subtribe to which the narrator belonged.

(1) Left hand on edge, curved, palm forward, extended backward length of arm toward the West (*far westward*).

(2) Arm same, turned hand, tips down, and moved it from north to south (*river*).

(3) Dipped same hand several times above and beyond last line (*beyond*).

(4) Hand curved (Y, more flexed) and laid on its back on top of his foot (*moccasins much curved up at toe*); then drew hands up legs to near knee, and cut off with edges of hands (*boot tops*), (*Warm Spring Apaches*, who wear booted moccasins with turn-up toes.)

(5) Hands held before him, tips near together, fingers gathered (U); then alternately opened and gathered fingers of both hands (P to U, U to P), and thrusting them toward each other a few times (*shot or killed many*).

(6) Held hands six inches from side of head, thumbs and forefingers widely separated (*Mexican, i. e.*, wears a broad hat).

(7) Held right hand on edge, palm toward him, threw it on its back forward and downward sharply toward earth (T on edge to X), (*dead, so many dead*).

(8) Put thumbs to temples and indexes forward, meeting in front, other fingers closed (*soldiers, i. e.*, cap-visor).

(9) Repeated No. 5 and No. 7 (*were also shot dead*).

(10) Placed first and second fingers of right hand, others closed, astride of left index, held horizontally (*horses*).

(11) Held hands on edge and forward (T on edge forward), pushed them forward, waving vertically (*marching, i. e., ran off with soldiers' horses or others*). N. B.—Using both hands indicates double ranks of troops marching also.

(12) Struck right fist across in front of chin from right to left sharply (*bad*).

(13) Repeated No. 4 (*Warm Spring Apache*).

(14) Moved fist, thumb to head, from center of forehead to right temple and a little backward (*fool*).

(15) Repeated No. 8 and No. 11 (*soldiers riding in double column*).

(16) Thrust right hand down over and beyond left, both palms down (W) (*came here*).

(17) Repeated No. 8 (*soldier*).

(18) Touched hair (*hair*).

(19) Touched tent (*quite white*).

(20) Touched top of shoulder (*commissioned officer*, *i. e.*, shoulder-straps).

(21) Thrust both hands up high (*high rank*).

(22) Right forefinger to forehead; waved it about in front of face and rolled head about (primarily *fool*, but qualified in this case by the interpreter as *no sabe much*).

(23) Drew hands up his thighs and body and pointed to himself (*Mescalero Indian*).

(24) Approximated hands before him, palms down, with thumbs and indexes widely separated, as if inclosing a circle (*captured*, *i. e.*, *corralled*, *surrounded*).

(25) Placed tips of hands together, wrists apart, held them erect (T, both hands inclined), (*house;* in this case *the agency*).

(26) Threw both hands, palms back, forward and downward, moving from knuckles (metacarpo-phalangeal joint) only, several times (*issuing rations*).

(27) Thrust two fingers (N) toward mouth and downward (*food*).

(28) Repeated No. 25 (*house*); outlined a hemispherical object (*wik-i-up*); repeated these several times, bringing the hands with emphasis several times down toward the earth (*village permanently here*).

(29) Repeated No. 25 several times and pointed to a neighboring hillside (*village over there*).

(30) Repeated Nos. 17 to 21, inclusive (*General X*).

(31) Thrust two fingers forward from his eyes (primarily *I see;* also *I saw*, or *there were*).

(32) Repeated No. 11 (*toward said hillside*), (*troops went over there with General X*).

(33) Repeated No. 4, adding, swept indexes around head and touched red paper on a tobacco wrapper (*San Carlos Apaches*, scouts especially distinguished by wearing a red fillet about the head); also added, drew indexes across each cheek from nose outward (*were much painted*).

(34) Repeated No. 24 and No. 23 (*to capture the Mescalero Indians*).

(35) Repeated No. 31 (*there were*).

(36) Repeated No. 33 (*San Carlos scouts*).

(37) Repeated No. 8 (*and soldiers*).

(38) Clasped his hands effusively before his breast (*so many! i. e., a great many*).

(39) Repeated No. 31 (*I saw*).

(40) Repeated No. 23 (*my people*).

(41) Brought fists together under chin, and hugged his arms close to his breast, with a shrinking motion of body (*afraid*).

(42) Struck off half of left index with right index (*half*, or *a portion*).

(43) Waved off laterally and upward with both hands briskly (*fled*).

(44) Projected circled right thumb and index to eastern horizon, thence to zenith (*next morning, i. e.*, sunrise to noon).

(45) Repeated No. 23 (*the Mescaleros*).

(46) Held hands in position of aiming a gun—left oblique—(*shoot*).

(47) Waved right index briskly before right shoulder (*no, did not; negation*).

(48) Swept his hand from behind forward, palm up (Y) (*the others came*).

(49) Repeated No. 5 (*and shot*).

(50) Repeated No. 23 (*the Mescaleros*).

(51) Repeated No. 7 (*many dead*).

(52) Repeated No. 8 (*soldiers*).

(53) Repeated No. 10 (*horse, mounted*).

(54) Hand forward, palm down (W) moved forward and up and down (*walking, i. e., infantry*).

(55) Beckoned with right hand, two fingers curved (N horizontal and curved) (*came*).

(56) Repeated No. 11 (*marching*).

(57) Repeated No. 28 (*to this camp*, or *village*).

(58) Repeated No. 23 (*with Mescaleros*).

(59) Repeated No. 24 (*as prisoners, surrounded*).

(00) Repeated No. 33 (*San Carlos scouts*).

(61) Placed hands, spread out (R inverted), tips down, about waist (*many cartridges*).

(62) Repeated No. 46 (*and guns*).

(63) Repeated No. 5 (*shot many*).

(64) Repeated No. 4 (*Warm Spring Apaches*).

(65) Repeated No. 23 (*and Mescaleros*).

(66) Moved fist—thumb to head—across his forehead from right to left, and cast it toward earth over left shoulder (*brave, i. e., the San Carlos scouts are brave*).

CONTINUOUS TRANSLATION OF THE ABOVE.

Far westward beyond the Rio Grande are the Warm Spring Apaches, who killed many Mexicans and soldiers and stole their horses. They (the Warm Spring Apaches) are bad and fools.

Some cavalry came here under an aged officer of high rank, but of inferior intelligence, to capture the Mescalero Indians.

The Mescaleros wished to have their village permanently here by the agency, and to receive their rations, *i. e.*, were peacefully inclined.

Our village was over there. I saw the general come with troops and San Carlos scouts to surround (or capture) the Mescalero Indians. There were a great many San Carlos scouts and soldiers.

I saw that my people were afraid, and half of them fled.

Next morning the Mescaleros did not shoot (were not hostile). The

others came and killed many Mescaleros. The cavalry and infantry brought us (the Mescaleros) to this camp as prisoners.

The San Carlos scouts were well supplied with ammunition and guns, and shot many Warm Spring Indians and Mescaleros.

The San Carlos scouts are brave men.

NA-WA-GI-JIG'S STORY.

The following is contributed by Mr. FRANCIS JACKER:

This narrative was related to me by *John Na-wa-gi-jig* (literally "noon-day sky"), an aged Ojibwa, with whom I have been intimately connected for a long period of years. He delivered his story, referring to one of the many incidents in his perilous life, orally, but with pantomimes so graphic and vivid that it may be presented truly as a specimen of gesture language. Indeed, to any one familiar with Indian mimicry, the story might have been intelligible without the expedient of verbal language, while the oral exposition, incoherent as it was, could hardly be styled anything better than the subordinate part of the delivery. I have endeavored to reproduce these gestures in their original connections from memory, omitting the verbal accompaniment as far as practicable. In order to facilitate a clear understanding it is stated that the gesturer was in a sitting posture before a camp fire by the lake shore, and facing the locality where the event referred to had actually occurred, viz, a portion of Keweenaw Bay, Lake Superior, in the neighborhood of Portage Entry, as seen by the annexed diagram, Fig. 319. The time of the relation (latter part of April) also coincided with the *actual* time. In speaking of "arm," "hand," "finger," &c., the "right" is understood if not otherwise specified. "Finger" stands for "forefinger."

(1) With the exclamation "*me-wi-ja*" (a long time ago), uttered in a slow and peculiarly emphatic manner, he elevated the arm above and toward the right at the head, accompanying the motion with an upward wave of the hand and held it thus suspended a moment—*a long time ago.* (This gesture resembles sign for *time, a long,* of which it seems to be an abbreviation, and it is not sufficiently clear without the accompanying exclamation.) Withdrawing it slowly, he placed the hand back upon his knee.

(2) He then brought up the left hand toward the temple and tapped his hair, which was gray, with the finger—*hair gray.*

(3) From thence he carried it down upon the thigh, placing the extended finger perpendicularly upon a fold of his trousers, which the thumb and finger of the right held grasped in such a manner as to advantageously present the smooth black surface of the cloth—*of that color, i. e., black.*

(4) Next, with a powerful strain of the muscles, he slowly stretched

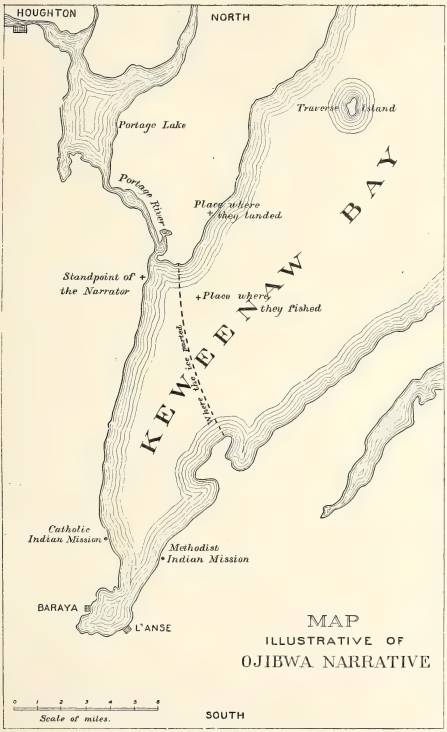

FIG. 319.—Scene of Na-wa-gi-jig's story.

out the right arm and fist and grasping the arm about the elbow with the left, he raised the forearm perpendicularly upward, then brought it down with force, tightening the grasp in doing so (fingers pressing upon knuckle, thumb against pit of elbow)—*strength.*

(5) Pointing first at me—*you.*

(6) He next held out the hand horizontally and flat, palm downward, about four feet above the ground, correcting the measure a moment afterward by elevating hand a few inches higher, and estimated the height thus indicated with a telling look, leaning the head toward the side—*about that height, i. e., a youth of about that size.*

(7) He then rapidly extended the arm about two-thirds of its length forward and toward the right, terminating the motion with a jerk of the hand upward, palm turned outward, and accompanied the motion with a nod of the head, the hand in its downfall closing and dropping upon knee—*very well.*

(8) Musing a few moments, he next slowly extended the arm and pointed with the fingers toward and along the surface of the frozen bay—*out there.*

(9) In an easterly direction—*eastward.*

(10) Thence turning the arm to the right he nodded the finger toward a projection of land southward at a distance of about two miles—following in each case the direction of the finger with the eyes—and immediately after placed the hand again eastward, indicating the spot with the same emphatic nod of the finger as though carrying the visible distance to a spot upon the expanse of the bay, which, bearing no object, could not be marked otherwise—*two miles out there.*

(11) Carrying the finger toward the body, he touched his breast—*I myself.*

(12) Thence erected the hand, turning its palm forward, forefinger perpendicularly extended, others slightly closed, and nodded it downward in an explanatory manner, all in an uninterrupted movement—*one,* meaning in connection with the preceding gesture—*I for one.*

(13) Again, with an emphatic movement, he turned the hand upward, slightly erecting the index, thumb pointing forward, remaining fingers partially and naturally opened and more or less separated—*furthermore.*

(14) Then quickly and after a moment's stop brought down the hand to a horizontal position, first and second fingers joining and fully extending during the movement, and pointing forward—*another, i. e., joined by another.* Repeating this motion, he at the same time called out the name *Ga-bi-wa-bi-ko-ke.*

(15) Following the exclamation with a repetition of No. 2—*gray hair*—repeatedly touching the hair, meaning in this case—*an old man.*

(16) Pointed with the finger toward the right, directing it obliquely toward the ground—*at a short distance toward my right.*

(17) Repeated No. 13—*furthermore.*

(18) Repeated No. 14, adding the third finger to joined fore and middle

fingers, thumb resting upon tip of fourth—*another, i. e., joined by a third,* and pronounced the words "*o-gwis-san Sa-ba-dis* (this is a corruption of the French "Jean Baptiste," a favorite name among Christianized Indians)—*John Baptist, his son,* while repeating the movement.

(19) Held up the three separated fingers perpendicularly in front of the face, pushing the hand forward a little—*three in all.*

(20) Presently lowered the hand, fingers relaxing, and carried it a short distance toward the left, thence back to the right, fingers pointing obliquely toward the ground in each case—*placed to the right and left of me at a short distance.*

(21) He then brought the hand—back toward the right, index horizontally extended, remaining fingers closed, thumb placed against second finger—in front of abdomen, and moved it slowly up and down two or three times, giving it a slight jerk at the upward motion, and raising the arm partially in doing so. At the same time he inclined the body forward a little, eyes looking down—*fishing.* This refers to fishing on the ice, and, as may be inferred from it, to the use of hook and line. A short stick to which the line is attached serves as a rod and is moved up and down in the manner described.

(22) After a short pause he elevated the hand, directing the index toward that point of the meridian which the sun passes at about the tenth hour of the day, and following the direction with the eye—*about ten o'clock.*

(23) Turning his face toward the southwest and holding up the flat and extended hand some distance in front of it, back outward, he waved it briskly and several times toward the face—*fresh breeze from the southwest.*

(24) Repeated No. 21 (*fishing*), playing the imaginary fish-line up and down regularly for a while, till all at once he changed the movement by raising the hand in an oblique course, which movement he repeated several times, each time increasing the divergence and the length of the motion—*the fish-hook don't sink perpendicularly any longer, i. e., it is moving.*

(25) Quickly erecting his body he looked around him with surprise—*looking with surprise.*

(26) Shading his eyes with the hand, gazed intensively toward the south—*fixedly gazing toward the south.*

(27) Threw up his arm almost perpendicularly the next moment—*greatly astonished.*

(28) Extended and slowly moved the arm from southeast to northwest as far as he could reach, at the same time exclaiming "*mig-wam*" "ice"— *the ice from shore to shore.*

(29) Approximated the flat and horizontally extended hands, backs upward, with their inner edges touching, whereupon, suddenly turning the edges downward, he withdrew them laterally, backs nearly opposed to each other—*parting.*

(30) Pushed the left hand, palm outward, fingers joined, edges up and down, forward and toward its side with a full sweep of the arm, head following the movement—*pushed in that direction, i. e., northeastward.*

(31) Repeated No. 23, but waved the hand only once and with a quick and more powerful movement toward the face—*by the force of the wind.*

(32) Rotated hands in front of body, rolling them tips over tips very rapidly, fingers with thumbs nearly collected to a point—*winding up the hook-line in a hurry.*

(33) Quickly passed the hand toward the left breast of his coat—*putting it in pocket.*

(34) And bending the body forward made motion as if picking up something—*picking up.*

(35) Raised the hand closed to fist, arm elevated so as to form a right angle with elbow, and made a short stroke downward and toward the left—*hatchet.*

(36) Thence moved the hand to side of breast and pushed it down the waist—*putting it into belt.*

(37) Placed the closed hands to each side of the waist (thumbs upward with tips facing each other) and approximated them rapidly and with a jerk in front of navel—*tightening the belt.*

(38) With both hands lowered to the ground, he described an elongated oval around his foot by placing tips of forefingers together in front of the toes and passing them around each side, meeting the fingers behind the heel and running them jointly backward a few inches to indicate a tail—*snow-shoe.*

(39) Raised up the heel, resting the foot on the toes and turning it a little toward the right, brought it back in a downward movement with a jerk—*putting it on.*

(40) Waved the left hand emphatically forward, palm backward, fingers joined and pointing downward, extending them forward at termination of motion, at the same time pushing forward the head—*starting.*

(41) Directed the finger of the same hand toward the light-house—*toward that point.*

(42) Pointed with extended first two fingers of the same hand, thumb with remaining fingers partially extended to right and to left—*companions.*

(43) Repeated No. 40 (*starting*) less emphatically.

(44) Made several very quick jumping movements forward with the extended left fingers, joined, back upward—*going very fast.*

(45) Repeated No. 23 (*wind*), increasing the force of the movement and terminating the sign with the second repetition (wave)—*wind increasing.*

(46) Raised up the hand in front of head and then arrested it a moment, palm outward, fingers extended, upward and forward—*halt.*

(47) Partially turning the body toward the north he lowered the extended hand, back forward, fingers joined and pointing downward toward the left of his feet and moved it closely in front of them, and with

a cutting motion toward the right, following the movement with the eye—*cut off right before feet, i. e., standing on the very edge.*

(48) Still facing the north, he carried the hand, back upward, fingers joined and extended, from left side of body outward and toward the right horizontally, indicating the rippled surface of turbulent water by an appropriate motion, and extending the arm to full length, fingers pointing northeastward (toward the right) at termination of motion, and accompanied the movement with a corresponding turn of the head, eyes gazing far into distance—*water all along the shore.*

(49) Pushed the extended finger, back upward, forward (*i. e.*, northward) in a slightly arched movement—*across.*

(50) Directing it toward an object (tree) at a distance of about one hundred yards the next moment—*a distance of about one hundred yards.*

(51) Repeated No. 49 (*across*) without interrupting the motion—*that distance placed across.*

(52) Motions as follows: Hands naturally relaxed, edges up and down, backs outward, are with a quick movement and simultaneously carried from the epigastrium forward and toward their sides, arms being extended from elbows only. The hands change their position during the movement and are ultimately placed palms upward, thumbs and fingers extended and widely separated, pointing forward. This is the general sign for *doubt.* He also turned the face from one side to the other as though interrogating his companions—*what are we to do?*

(53) Repeated No. 35 (*hatchet*).

(54) Raised up the finger perpendicularly, other fingers closed, thumb resting against second, and emphatically inclined it forward—*only one.*

(55) Elevated the arm from the elbow toward the head, hand naturally relaxed, back obliquely upward, inclining the face sideward with a look of consternation, simultaneously, and again mechanically lowered it, dropping palm of hand heavily upon the knee—"*bad fix.*"

(56) Placed the hand to his hip and raised it up, closed to fist, by a rapid and very energetic movement, ejaculating *haw!—quick to the work* (referring to the ax or hatchet).

(57) Turning the body downward, he passed the hand, with forefinger directed toward the ground, forward, sideward, and backward, in three movements, each time turning at a right angle—*measuring off a square piece on the ground, i. e., on the ice.*

(58) Looked and pointed toward an object some twenty feet off, then opposed palms of hands horizontally, and at a short distance from each other, connecting both movements in such a manner as to clearly illustrate their meaning—*about twenty feet wide.*

(59) Moved the hand—fist, thumb upward—several times quickly up and down a few inches, the arm progressing forward at every stroke—*cutting it off.*

(60) Repeated No. 55 (*bad fix*), meaning in this case—*bad job.*

(61) Opposed the palms of both hands, vertically, at a distance of

eight inches, holding them thus steady a moment and estimating the thus indicated measure with the eyes—*eight inches thick.*

(62) Then struck the palm of left with the back of arched right forcibly—*solid ice.*

(63) Laid the joined and extended first two fingers, palm up, across side of leg, a foot above heel, accompanying the movement with the eye—*one foot deep.*

(64) Pushed downward perpendicularly and from same point the flat, extended hand—*sinking*, or *giving in*—and turning the hand upward at wrist, back downward, he flirted up the fingers several times quickly—*water—slush and water.*

(65) Passed one hand over the other as in the act of pulling off mittens—*mittens.*

(66) Made the motion of wringing out a wet piece of cloth—*wringing wet.*

(67) Grasped a fold of his trowsers (below the knee) and wrung it—*trowsers also wet.*

(68) Placed palms of both hands upon legs, near to the ankles, and dragged them up to the knees—*up to the knees.*

(69) Shivered—*feeling cold.*

(70) Pointed with thumb backward and toward the right (designating his companion) and repeated No. 2 (*hair gray*)—*my old companion, i. e., Ga-bi-wa-bi-ko-ke.*

(71) Repeated No. 69 (*feeling cold*) more emphatically—*more so, i. e., suffering worse from the cold.*

(72) Repeated No. 59 (*cutting the ice*).

(73) Made sign for *tired—getting tired*, as follows: The left arm is partly extended forward, and is gently struck near the bend of the elbow, usually above it, with the palm of the right hand, at the same time the head is usually inclined to the left side, then in similar manner the right arm is extended and struck by the left hand, and the head in turn inclined to the right.

(74) Repeated No. 35—(*hatchet*).

(75) Turned the slightly closed left (thumb obliquely upward) over to its side, partially opening it in so doing, fingers pointing to left—*passing it over to his companion at the left, i. e., Sabadis.*

(76) Flung forefingers of both hands, backs forward, thumbs upward, remaining fingers partially closed, toward their respective sides alternately—*by turns.*

(77) Repeated No. 59 (*cutting the ice*).

(78) Elevated the hand above head, thumb and first two fingers extended and directed toward the western meridian, and shook it emphatically and with a tremulous motion up and down while thus suspended—*at a late hour.*

(79) Followed with the sign for *done, finished*, as follows: Left hand, with forearm horizontally extended toward the right, is held naturally

relaxed, back outward, a few inches in front of body and at a right angle with opposite hand, which is placed on a higher level, slightly arched, edge downward, fingers joined and extended forward. Pass the right quickly and with a cutting motion downward and toward its side, at the same time withdraw the left a few inches toward the opposite direction—*finished our work.*

(80) Quickly threw up his arm, ejaculating "haw!"—*let us start.*

(81) Passed both hands approximated in front of body, naturally relaxed, backs outward, forward and toward their respective sides, extending and widely separating the fingers during the movement, and again approximating them with quickly accelerated speed and arresting them, closed to fists, in front of body and with a jerk upward—*with united efforts.*

(82) Placing the fists, thumbs upward, pointing forward and placed upon side of forefingers, with their wrists against the breast, he pushed them forward and downward a few inches, head slightly participating in the movement—*pushing off.*

(83) Repeated No. 38 (*snow-shoe*)—*with snow-shoes.*

(84) Immediately reassumed the position of "pushing off" as in No. 82, slowly passing forward the fists further and further—*pushing and gradually moving off.*

(85) Quickly passed and turned the closed left forward, upward, and backward, opening and again closing the fingers in so doing, and executing at almost the same instant a similar, but smaller, revolution with the right—*turning over the snow-shoe, tail up.*

(86) With both hands closed to fists, left obliquely over the right and on the right side of the body, made motion as if paddling—*paddling.*

(87) Moved and pointed finger of left towards its side, *i. e.*, northward —*toward the shore.*

(88) Moved both hands, flat and extended, backs upward, toward the left side, by an even and very slow movement—*moving along very slowly toward that direction.*

(89) Repeated No. 23—*southwest wind.*

(90) Repeated No. 30—*pushing northeastward.*

(91) Turned the thumb of left over to the left—*Sabadis.*

(92) Repeated No. 32 (*winding up*), reversing the motion—*winding off the hook-line.*

(93) Approximated both hands with their tips horizontally in front of body, first two fingers with thumb collected to a point, and moving the fingers as in the act of twisting a cord, gradually receded the hands—*twisting.*

(94) Thrust forward three fingers of the right—*three, i. e., hook-lines.*

(95) Repeated No. 93, then rubbed palm of flat and extended right forward over the thigh repeatedly and with a slight pressure—*twisting them tightly.*

(96) Approximated both hands closed to fists, thumbs upward, in

front of body and pulled them asunder repeatedly by short, quick, and sudden jerks—*proving strength of line.*

(97) Hooked the forefinger, hand turned downward at wrist, remaining fingers closed, thumb resting upon first—*fish-hook.*

(98) Raised and curved three fingers and thrust them forward a little separated, back to the front—*three, i. e., hooks.*

(99) Collecting fore and middle fingers of each hand to a point with thumb, he opposed tips of both hands, vertically describing with the upper hand several short circular movements around the tip of the lower—*tying together.*

(100) Hooked the separated fore and middle fingers of the right, pointing upward, back forward, and placed the hooked finger of the left, palm forward, in front and partially between the fork of the first—*in the shape of an anchor.*

(101) Thrust both hands, backs upward, fingers extended and separated, forward (*i. e.*, northward), vigorously, left being foremost—*throwing toward the shore.*

(102) Thence elevating the right toward the head, he thrust it downward in an oblique direction, fore and middle fingers extended and joined with the thumb—*sinking.*

(103) Placing hands in the position attained last in No. 100 (*throwing out toward shore*), he closed the fingers, drawing the hands back toward the body and leaning backward simultaneously—*hauling in.*

(104) Elevated the naturally closed hand to side of head, fingers opening and separating during the movement—at the same time and with a slight jerk of the shoulders inclining the head sideward—and again closed and slowly dropped it upon knee—*in vain.*

(105) Dropped the finger perpendicularly downward, following the movement with the eye—*bottom.*

(106) Passed the flat hand, palm down, from side to side in a smooth and horizontal movement—*smooth.*

(107) Made the sign for *stone, rock*, as follows: With the back of the arched right hand (H) strike repeatedly in the palm of the left, held horizontal, back outward, at the height of the breast and about a foot in front, the ends of the fingers pointing in opposite directions.

(108) Repeated No. 100—*anchor.*

(109) Dragged the curved fore and middle fingers over the back of the extended left—*dragging.*

(110) Waved the left—bent at the wrist, back outward—forward and upward from body, extending the arm to full length, at the same time inclining and pushing forward the head, and repeated the gesture more emphatically—*trying again and again.*

(111) Waved both hands—backs outward, fingers slightly joined, tips facing each other and closely approximated in front of breast—forward and toward their respective sides a short distance, turning the palms upward during the movement, thumb and fingers being extended and

widely separated toward the last. At the same time he inclined the head to one side, face expressing disappointment—*all in vain.*

(112) Repeated No. 80—*Let us start anew!*

(113) Repeated No. 86—*paddling.*

(114) Repeated the preceding gesture, executing the movement only once very emphatically—*vigorously.*

(115) Waved the finger toward the place of the setting sun, following the direction with the eye—*day is near its close.*

(116) Repeated No. 69, more emphatically—*feeling very cold.*

(117) Repeated No. 70—*Ga-bi-wa bi-ko-ke.*

(118) Made sign for *without*, dropping the hands powerless at the sides, with a corresponding movement of head—*exhausted.*

(119) Pointed with finger toward the light-house and drawing back the finger a little, pushed it forward in the same direction, fully extending the arm—*that distance, i. e., one mile beyond light-house.*

(120) Elevated both hands to height of shoulder, fingers extended toward the right, backs upward, moving them horizontally forward—left foremost—with an impetuous motion toward the last—*drifted out.*

(121) Repeated No. 86, executing the movement a series of times without interruption and very energetically—*paddling steadily and vigorously.*

(122) Pointed with the left forefinger to his breast—*I myself.*

(123) Waved the thumb of the same hand over to left side without interrupting motion of hand—*and Sabadis.*

(124) Moved the extended left—back upward, fingers slightly joined—toward left side, and downward a few inches—*shore.*

(125) Elevated it to level of eyes, fingers joined and extended, palm toward the right, approaching it toward the face by a slow interrupted movement—*drawing nearer and nearer.*

(126) Drawing a deep breath—*relieved.*

(127) Repeated No. 86 very emphatically—*paddling with increased courage and vigor.*

(128) Gazed and pointed northeastward, shading the eyes with the hand, at the same time pushing the left—bent downward at wrist, palm backward—forward in that direction, arm fully extended, fingers separated and pointing ahead at termination of motion—*out there at a great distance.*

(129) Made a lateral movement with the hand flat and extended over the field of ice in front of him—*the ice-field.*

(130) Described a series of waves with the flat and extended left, back upward, horizontally outward—*sea getting turbulent.*

(131) Joyously flourished the hand above head, while pronouncing the word *ke-ya-bi—only yet.*

(132) Pointed the finger toward the upturned root of a tree a few yards off, thence carrying it forward directed it toward the shore in front—*a few yards from shore.*

(133) Pointing toward the sun first, he placed palms of both hands in opposition vertically, a space of only an inch or two intervening, with a glance sideways at the height thus indicated—*the sun just setting.*

(134) Made three vigorous strokes with the imaginary paddle—*three more paddle-strokes.*

(135) Moved both hands (flat and extended, backs upward) evenly and horizontally toward the left, terminating the movement by turning hands almost perpendicularly upward at wrist, thus arresting them suddenly—*the ice-raft runs up against the shore.*

(136) Lastly threw up the hand perpendicularly above head, and bringing it down, placed the palm gently over the heart with an air of solemnity—*we are saved.*

Free translation of the story.

Many years ago—my hair, then black and smooth, has since turned gray; I was then in the prime of life; you, I suppose, were a young lad at that time—the following incident occurred to me:

Yonder on the ice, two miles eastward, I was one day fishing in company with two others, the old Gabiwabikoke and his son John Baptist. It was about ten o'clock in the morning—a fresh breeze from the southwest had previously been getting up—when the hook-line which I was playing up and down began to take an oblique course as though it were moved by a current. Surprised, I looked up and around me. When glancing toward the south I saw a dark streak stretching from shore to shore across the bay; the ice had parted and the wind was carrying it out toward the open lake. In an instant I had wound up my hook-line, picked up my hatchet and snow-shoes, which I put on my feet, and hurried—the others following my example—toward the nearest point of land, yonder where the light-house stands. The wind was increasing and we traveled as fast as we could. There we arrived at the very edge of the ice, a streak of water about one hundred yards in width extending northward along the shore as far as we could see. What to begin with, nothing but a single hatchet? We were in a bad situation. Well, something had to be done. I measured off a square piece on the ice and began cutting it off with the hatchet, a hard and tedious labor. The ice was only eight inches thick, but slush and water covered it to the depth of a foot. I soon had my mittens and trowsers wringing wet and began to feel cold and tired. The old Gabiwabikoke was in a worse state than I. His son next took the hatchet and we all worked by turns. It was about two o'clock in the afternoon when we finished our work. With the help of our snow-shoes (stemming their tail-ends against the edge of the solid ice), we succeeded in pushing off our raft. Turning our snow-shoes the other way (using their tails as handles), we commenced paddling with them toward the shore. It was a very slow progress, as the wind drifted us outward continually. John Baptist managed to twist

our three hook-lines into a strong cord, and tying the hooks together in the shape of an anchor, he threw it out toward the shore. Hauling in the line the hooks dragged over the smooth rock bottom and would not catch. Repeated trials were of no avail. We all resumed our former attempt and paddled away with increased energy. The day was drawing near its close, and we began to feel the cold more bitterly. Gabiwabikoke was suffering badly from its effects and was entirely played out. We had already drifted more than a mile beyond the light-house point. John Baptist and I continued paddling steadily and vigorously, and felt relieved and encouraged when we saw the shore draw near and nearer. The ice-field, by this time, was miles away to the northeast, and a sea was getting up. At last, just when the sun was setting, only a few yards separated us from the shore; three more paddle-strokes and our raft ran up against the beach. We were safe.

The oral part of the story in the language of the narrator, with a literal translation into English.

(1) *Me"'wija*
a long time ago
(2) *aw ninisis'san*
this my hair
(3) *me'gwa giijina'gwak tibi'shko aw*
while it looked like that
(4) *me'gwa gimashkaw'isian*
while I possessed strength
(5) *kin dash*
you and (*i. e.*, and you)
(6) *ga'nabatch kikwiwi'se"siwina'ban*
perhaps (probably) were a boy
(7) *mi'iw*
very well
(8)–(10) *iwe'di*
there
(11) (12) *nin be'jig*
I one
(13) *mi'nawa*
again (furthermore)
(14) *Gabiwa'bikoke*
"The Miner"
(15) *akiwe"'si*
old man
(16) Expressed by gesture only.
(17) The same as No. 13.
(18) *ogwis'san ga'ie, Sabadis*
his son too, John Baptist.
(19) *mi minik'*
so many
(20) (21) Gestures only.
(22) *mi wa'pi*
thus far, *i. e.*, at that time.
(23) *we'ai gion'din*
then the wind blew from
(24) *me'gwa nin wewe'banabina'ban*
while I was (in the act of) fishing with the hook
nin'goting gonin'gotchi
at one time somewhere (out of its course)
oda'bigamo nimigis'skane'ab
was drawn my hook line
(25) *a'nin ejiwe'bak?*
how it happens?
(26) Gesture only.
(27) *taai'!*
ho!
(28) *mi'gwam*
the ice
(29) *ma'dja*
goes
(30) (31) Gestures only.
(32) *we'wib*
quickly
(33) (34) Gestures only.

(35) *wagak'wadö"s*
hatchet.
(36) (37) Gestures only.
(38) (39) *nin bita'gime*
I put on snowshoes
(40) *nin madja'min*
we go (start)
(41) Gestures only.
(42) (43) *mamaw'e*
together
(44) Gesture only.
(45) *esh'kam ki'tchi no'din*
more big wind
(46) Gesture only.
(47) *mi ja'igwa gima'djishkad* (*i. e.*, *mi'gwam*)
already has moved off (*i. e.*, the ice)
(48) (49) Gestures only.
(50) *mi'wapi*
thus far, *i. e.*, at such adistance
(51) Gesture only.
(52) *a'nin dash gediji'tchigeiang?*
how (*i. e.*, what) shall we do?
(53) (54) *mi e'ta be'jigwang wagak'-wadö"s*
only one hatchet
(55) *ge'get gisan'agissimin*
indeed we are badly off.
(56) *haw! bak'wewada mi'-gwam!*
well! (hallo!) let us cut the ice!
(57) (58) (59) Gestures only.
(60) *sa'nagad*
it is bad (hard)
(61) *mi epi'tading*
so it is thick (so thick is it)
(62) Gesture only.
(63) *mi dash mi'nawa minik'*
that again much (that much again)
(64) *nibi' gon ga'ie*
water snow too (water and snow)
(65) *nimidjik a'wanag*
my mittens
(66) *a'pitchi*
very much
(67) *nindos'san gaie*
my trowsers two
(68) Gestures only.
(69) *nin gi'katch ja'igwa*
I feel cold already
(70) *aw sa kwe"si*
the old man
(71) *nawatch' win'*
more yet he
(72) Gesture only.
(73) *nind aie'kos ja'igwa*
I am tired already
(74) Gesture only.
(75) *Sa'badis*
John Baptist
(76) *memesh'kwat kaki'na*
by turns all
(77) Gesture only.
(78) *wi'ka ga'ishkwanawo'kweg*
late in the afternoon
(79) *mi gibakwewangid*
now it is cut loose
(80) *haw!*
well! (ho!)
(81) *mama'we*
together
(82) Gesture only.
(83) *a'gimag*
snowshoes
(84) *ma'djishka*
it is moving
(85)–(87) Gestures only.
(88) *aga'wa ma'djishka*
scarcely it moves (very little)
(89) *no'din*
wind
(90) Gesture only.
(91) *Sa'badis*
John Baptist

(92) *migiss'kaneyab*
hook-line
(93) (94) *oginisswa'biginan*
he twisted three cords together
(95)–(98) Gestures only.
(99) *oginisso'bidonan* (*i. e.*, *migaskanan*)
he tied together three (*i. e.*, hooks)
(100) Gesture only.
(101) *ogiaba'gidonan dash*
he threw it out
(102) Gesture only.
(103) *owikobi'donan*
he wants to draw it in
(104) *kawes'sa*
in vain ("no go")
(105)–(108) Gestures only.
(109) *ka'win sagakwidis'sinon*
(not) it don't catch on the rock-bottom
(110) *mi'nawa—mo'jag*
again—often (repeatedly)
(111) The same as No. 104.
(112) The same as No. 80.
(113) Gesture only.
(114) *e'nigok*
vigorously
(115) *ja'igwa ona'kwishi*
already evening
(116) *esh'kam kis'sina*
more cold (getting colder)
(117) The same as No. 70.
(118) *mi ja'igwa gianiji'tang*
already he has given up
(119) *was'sa ja'igwa*
far already
(120) *niwebas'himin*
we have drifted out
(121) Gesture only.
(122) (123) *mi'sa e'ta mij'iang*
(now) only we are two
(124) Gesture only.
(125) *ja'igwa tchi'gibig*
already near to shore
(126) *mi ja'igwa anibonen'damang*
now we catch new spirits
(127) *esh'kam nigijjaw'isimin*
more we are strong (*i. e.*, our strength and courage increases)
(128) (129) *e-eh! was'sa ja'igwa' mi'gwam!*
oh! far already the ice!
(130) *ja'igwa*
already
(131) *ke'abi*
yet
(132) *go'mapi*
so far perhaps
(133) *ge'ga bangi'shimo*
nearly sundown
(134) Gesture only.
(135) *mi gibima'jagang*
we have landed
(136) *mi gibima'disiang*
we have saved our lives.

DISCOURSES.

ADDRESS OF KIN CHĒ-ĔSS.

The following is the farewell address of KIN CHĒ-ĔSS (Spectacles), medicine-man of the Wichitas, to Rev. A. J. HOLT, missionary, on his departure from the Wichita Agency, in the words of the latter:

He placed one hand on my breast, the other on his own, then clasped his two hands together after the manner of our congratulations—*We are friends*, Fig. 320. He placed one hand on me, the other on himself, then placed the first two fingers of his right hand between his lips—*We are brothers*. He placed his right hand over my heart, his left hand over his own heart, then linked the first fingers of his right and left hands—*Our hearts are linked together*. See Fig. 232, p. 386. He laid his right hand on me lightly, then put it to his mouth, with the knuckles lightly against his lips, and made the motion of flipping water from the right-hand forefinger, each flip casting the hand and arm from the mouth a foot or so, then bringing it back in the same position. (This repeated three or more times, signifying *talk* or *talking*.) Fig. 321. He then made a motion with his right hand as if he were fanning his right ear; this repeated. He then extended his right hand with his index finger pointing upward, his eyes also being turned upward—*You told me of the Great Father*. Pointing to himself, he hugged both hands to his bosom, as if he were affectionately clasping something he loved, and then pointed upward in the way before described—*I love him* (the Great Father). Laying his right hand on me, he clasped his hands to his bosom as before—*I love you*. Placing his right hand on my shoulder, he threw it over his own right shoulder as if he were casting behind him a little chip, only when his hand was over his shoulder his index finger was pointing behind him—*You go away*. Pointing to his breast, he clinched the same hand as if it held a stick, and made a motion as if he were trying to strike something on the ground with the bottom of the stick held in an upright position—*I stay*, or *I stay right here*, Fig. 322.

FIG. 320.

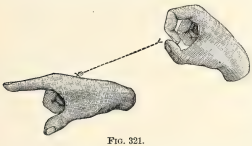

FIG. 321.

FIG. 322.

Placing his right hand on me, he placed both his hands on his breast and breathed deeply two or three times, then using the index finger and thumb of each hand as if he were holding a small pin, he placed the two hands in this position as if he were holding a thread in each hand and between the thumb and forefinger of each hand close together, and

then let his hands recede from each other, still holding his fingers in the same position, as if he were letting a thread slip between them until his hands were two feet apart—*You live long time*, Fig. 323. Laying

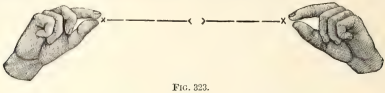

Fig. 323.

his right hand on his breast, then extending his forefinger of the same hand, holding it from him at half-arm's length, the finger pointing nearly upward, then moving his hand, with the finger thus extended, from side to side about as rapidly as a man steps in walking, each time letting his hand get farther from him for three or four times, then suddenly placing his left hand in a horizontal position with the fingers extended and together so that the palm was sidewise, he used the right-hand palm extended, fingers together, as a hatchet, and brought it down smartly, just missing the ends of the fingers of the left hand, Fig. 324. Then placing his left hand, with the thumb and forefinger closed, to his heart, he brought his right hand, fingers in the same position, to his left, then, as if he were holding something between his thumb and forefinger, he moved his right hand away as if he were slowly casting a hair from him, his left hand remaining at his breast, and his eyes following his right—*I go about a little while longer, but will be cut off shortly and my spirit will go away* (or will die). Placing the thumbs and forefingers again in such a position as if he held a small thread between the thumb and forefinger of each hand, and the hands touching each other, he drew his hands slowly from each other, as if he were stretching a piece of gum-elastic; then laying his right hand on me, he extended the left hand in a horizontal position, fingers extended and closed, and brought down his right hand with fingers extended and together, so as to just miss the tips of the fingers of his left hand; then placing his left forefinger and thumb against his heart, he acted as if he took a hair from the forefinger and thumb of his left hand with the forefinger and thumb of the right, and slowly cast it from him, only letting his left hand remain at his breast, and let the index finger of the right hand point outward toward the distant horizon—*After a long time you die.* When placing his left hand upon himself and his right hand upon me, he extended them upward over his head and clasped them there—*We then meet in heaven.* Pointing upward, then to himself, then to me, he closed the third and little finger of his right hand, laying his thumb over them, then extending his first and second fingers about as far apart as the eyes, he brought his hand to his eyes, fingers pointing outward,

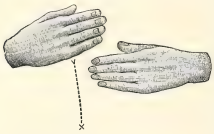

Fig. 324.

and shot his hand outward—*I see you up there.* Pointing to me, then giving the last above-described sign of *look*, then pointing to himself, he made the sign as if stretching out a piece of gum-elastic between the fingers of his left and right hands, and then made the sign of *cut-off* before described, and then extended the palm of the right hand horizontally a foot from his waist, inside downward, then suddenly threw it half over and from him, as if you were to toss a chip from the back of the hand (this is the negative sign everywhere used among these Indians)—*I would see him a long time, which should never be cut off, i. e., always.*

Pointing upward, then rubbing the back of his left hand lightly with the forefinger of his right, he again gave the negative sign.—*No Indian there* (in heaven). Pointing upward, then rubbing his forefinger over the back of my hand, he again made the negative sign—*No white man there.* He made the same sign again, only he felt his hair with the forefinger and thumb of his right hand, rolling the hair several times between the fingers—*No black man in heaven.* Then rubbing the back of his hand and making the negative sign, rubbing the back of my hand and making the negative sign, feeling of one of his hairs with the thumb and forefinger of his right hand, and making the negative sign, then using both hands as if he were reaching around a hogshead, he brought the forefinger of his right hand to the front in an upright position after their manner of counting, and said thereby—*No Indian, no white man, no black man, all one.* Making the "hogshead" sign, and that for *look*, he placed the forefinger of each hand side by side pointing upward—*All look the same*, or alike. Running his hands over his wild Indian costume and over my clothes, he made the "hogshead" sign, and that for *same*, and said thereby—*All dress alike there.* Then making the "hogshead" sign, and that for *love*, (hugging his hands), he extended both hands outward, palms turned downward, and made a sign exactly similar to the way ladies smooth a bed in making it; this is the sign for *happy—All will be happy alike there.* He then made the sign for *talk* and for *Father*, pointing to himself and to me—*You pray for me.* He then made the sign for *go away*, pointing to me, he threw right hand over his right shoulder so his index finger pointed behind him—*You go away.* Calling his name he madethe sign for *look* and the sign of *negation* after pointing to me—*Kin Chē-ĕss see you no more.*

Fig. 322, an illustration in the preceding address, also represents a common gesture for *sit down*, if made to the right of the hip, toward the locality to be occupied by the individual invited. The latter closely corresponds to an Australian gesture described by Smyth (*The Aborigines of Victoria*, *London*, 1878, Vol. II, p. 308, Fig. 260), as follows: "*Minnie-minnie* (wait a little). It is shaken downwards rapidly two or three times. Done more slowly towards the ground, it means 'Sit down.'" This is reproduced in Fig. 325.

FIG. 325.

TSO-DI-A'-KO'S REPORT.

The following statement was made to Dr. W. J. HOFFMAN by TSO-DI-A'-KO (Shaved-head Boy), chief of the Wichitas in Indian Territory, while on a visit to Washington, D. C., in June 1880.

The Indian being asked whether there was any timber in his part of the Territory, replied in signs as follows:

(1) Move the right hand, fingers loosely extended, separated and pointing upward, back to the front, upward from the height of the waist to the front of the face—*tree* (for illustration see Fig. 112, p. 343); repeat this two or three times—*trees;* (2) then hold the hand, fingers extended and joined, pointing upward, with the back to the front, and push it forward toward different points on a level with the face—*standing at various places;* (3) both hands, with spread and slightly curved fingers, are held about two feet apart, before the thighs, palms facing, then draw them toward one another horizontally and gradually upward until the wrists cross, as if grasping a bunch of grass and pulling it up—*many;* (4) point to the southwest with the index, elevating it a little above the horizon—*country;* (5) then throw the fist edgewise toward the surface, in that direction—*my, mine;* (6) place both hands, extended, flat, edgewise before the body, the left below the right, and both edges pointing toward the ground a short distance to the left of the body, then make repeated cuts toward that direction from different points, the termination of each cut ending at nearly the same point—*cut down,* Fig. 326; (7) hold the left hand with the fingers and thumb collected to a point, directed horizontally forward, and make several cutting motions with the edge of the flat right hand transversely by the tips of the left, and upon the wrist—*cut off the ends;* (8) then cut upon the left hand, still held in the same position, with the right, the cuts being parallel to the longitudinal axis of the palm—*split;* (9) both hands closed in front of the body, about four inches apart, with forefingers and thumbs approximating half circles, palms toward the ground, move them forward so that the back of the hand comes forward and the half circles imitate the movement of wheels—*wagon,* Fig. 327; (10) hold the left flat hand before the body, pointing horizontally forward, with the palm down, then bring the right flat hand from the right side and slap the palm upon the back of the left several

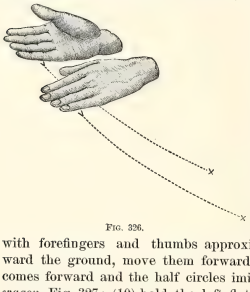

FIG. 326.

times—*load upon*, Fig. 328; (11) partly close the right hand as if grasping a thick rod, palm toward the ground, and push it straight forward nearly to arm's length—*take;* (12) hold both hands with fingers naturally extended and slightly separated nearly at arm's length before the body, palms down, the right lying upon the left, then pass the upper

FIG. 327.

FIG. 328.

forward and downward from the left quickly, so that the wrist of the right is raised and the fingers point earthward—*throw off;* (13) cut the left palm repeatedly with the outer edge of the extended right hand—*build;* (14) hold both hands edgewise before the body, palms facing, spread the fingers and place those of one hand into the spaces between those of the left, so that the tips of one protrude beyond the backs of the fingers of the other—*log house*, see Fig. 253, p. 428; (15) then place the flat right hand, palm down and fingers pointing to the left, against the breast and move it forward, and slightly upward and to the right—*good.*

ANALYSIS OF THE FOREGOING.

[There is] much | timber | [in] my | country | [of which I] cut down
(3) (1, 2) (5) (4) (6)
[some], | trimmed, | split, | loaded it upon | a wagon [and] | took it
(7) (8) (10) (9) (11)
away, | [where I] threw [it] off | [and] built | [a] good | house | .
(12) (13) (15) (14)

NOTES.—As will be seen, the word *timber* is composed of signs No. 1 and 2, signifying *trees standing.* Sign No. 3, for *many*, in this instance, as in similar other examples, becomes *much.* The word "in," in connection with *country* and *my*, is expressed by the gesture of pointing (passing the hand less quickly than in ordinary sign language) before making sign No. 5. That sign commonly given for *possession*, would, without the prefix of indication, imply *my country*, and with that prefix signifies *in my country.* Sign No. 7, *trimmed*, is indicated by chopping off the ends, and facial expression denoting *satisfaction.* In sign Nos. 11 and 12 the gestures were continuous, but at the termination of the latter the narrator straightened himself somewhat, denoting that he had overcome the greater part of the labor. Sign No. 14 denotes *log-house*, from the manner of interlacing the finger-ends, thus representing the corner of a log-house, and the arrangement of the ends of the same. *Indian lodge* would be indicated by another sign, although the latter is often used as an abbreviation for the former, when the subject of conversation is known to all present.

LEAN WOLF'S COMPLAINT.

The following remarks were obtained by Dr. W. J. HOFFMAN from TCE-CAQ-A-DAQ-A-QIC (Lean Wolf), chief of the Hidatsa Indians of Dakota Territory, who visited Washington in 1880:

FOUR YEARS AGO THE AMERICAN PEOPLE AGREED TO BE FRIENDS WITH US, BUT THEY LIED. THAT IS ALL.

(1) Place the closed hand, with the thumb resting over the middle of the index, on the left side of the forehead, palmar side down, then

FIG. 329.

draw the thumb across the forehead to the right, a short distance beyond the head—*white man*, American, Fig. 329.

FIG. 330.

(2) Place the naturally extended hand, fingers and thumb slightly separated and pointing to the left, about fifteen inches before the right

side of the body, bringing it to within a short distance—*with us*, Fig. 330.

(3) Extend the flat right hand to the front and right as if about to grasp the hand of another individual—*friend, friends*, Fig. 331. For remarks connected with this sign see pp. 384–386.

FIG. 331.

(4) Place the flat right hand, with fingers only extended, back to the front, about eighteen inches before the right shoulder—*four* [years], Fig. 332.

FIG. 332.

(5) Close the right hand, leaving the index and second fingers extended and slightly separated, place it, back forward, about eight inches before

the right side of the body, and pass it quickly to the left in a slightly downward curve—*lie*, Fig. 333.

FIG. 333.

(6) Place the clinched fists together before the breast, palms down, then separate them in a curve outward and downward to their respective sides—*done, finished*, "*that is all*", Fig. 334.

FIG. 334.

SIGNALS.

The collaborators in the work above explained have not generally responded to the request to communicate material under this head. It is, however, hoped that by now printing some extracts from published works and the few contributions recently procured, the attention of observers will be directed to the prosecution of research in this direction.

The term "signal" is here used in distinction from the signs noted in the DICTIONARY, extracts from which are given above, as being some action or manifestation intended to be seen at a distance, and not allowing of the minuteness or detail possible in close converse. Signals may be executed, first, exclusively by bodily action; second, by action of the person in connection with objects, such as a blanket, or a lance, or the direction imparted to a horse; third, by various devices, such as smoke, fire or dust, when the person of the signalist is not visible. When not simply intended to attract attention they are generally conventional, and while their study has not the same kind of importance as that of gesture signs, it possesses some peculiar interest.

SIGNALS EXECUTED BY BODILY ACTION.

Some of these are identical, or nearly so, with the gesture signs used by the same people.

ALARM. See NOTES ON CHEYENNE AND ARAPAHO SIGNALS, *infra*.

ANGER.

Close the hand, place it against the forehead, and turn it back and forth while in that position. (Col. R. B. Marcy, U. S. A., *Thirty Years of Army Life on the Border*, *New York*, 1866, p. 34.)

COME HERE.

The right hand is to be advanced about eighteen inches at the height of the navel, horizontal, relaxed, palm downward, thumb in the palm; then draw it near the side and at the same time drop the hand to bring the palm backward. The farther away the person called is, the higher the hand is raised. If very far off, the hand is raised high up over the head and then swung forward, downward, and backward to the side. (*Dakota* I, IV.)

DANGER.

There is something dangerous in that place.—Right-hand index-finger and thumb forming a curve, the other fingers closed; move the right

hand forward, pointing in the direction of the dangerous place or animal. (*Omaha* I.)

DEFIANCE.

Right-hand index and middle fingers open; motion toward the enemy signifies "I do not fear you." Reverse the motion, bringing the hand toward the subject, means "Do your worst to me." (*Omaha* I.)

DIRECTION.

Pass around that object or place near you—she-í-he ti-dhá-ga.—When a man is at a distance, I say to him "Go around that way." Describe a curve by raising the hand above the head, forefinger open, move to right or left according to direction intended and hand that is used, *i. e.*, move to the left, use right hand; move to the right, use left hand. (*Omaha* I; *Ponka* I.)

HALT!

——— To inquire disposition.

Raise the right hand with the palm in front and gradually push it forward and back several times; if they are not hostile it will at once be obeyed. (Randolph B. Marcy, *The Prairie Traveler. New York*, 1859, p. 214.)

——— Stand there! He is coming to you.

Right hand extended, flat, edgewise, moved downward several times. (*Omaha* I.)

——— Stand there! He is going toward you.

Hold the open right hand, palm to the left, with the tips of the fingers toward the person signaled to; thrust the hand forward in either an upward or downward curve. (*Omaha* I; *Ponka* I.)

——— Lie down flat where you are—she-dhu bis-pé zha^{n}-ga.

Extend the right arm in the direction of the person signaled to, having the palm down; move downward by degrees to about the knees. (*Omaha* I; *Ponka* I.)

PEACE; FRIENDSHIP.

Hold up palm of hand.—Observed as made by an Indian of the Kansas tribe in 1833. (John T. Irving, *Indian Sketches. Philadelphia*, 1835, vol. ii, p. 253.)

Elevate the extended hands at arm's length above and on either side of the head. Observed by Dr. W. J. Hoffman, as made in Northern Arizona in 1871 by the Apaches, Mojaves, Hualpais, and Seviches. "No arms"—corresponding with "hands up" of road-agents. Fig. 335.

Fig. 335.—A signal of peace.

FIG. 336.—Signal, "Who are you?" Answer, "Pani."

The right hand held aloft, empty. (General G. A. Custer, *My Life on the Plains, New York*, 1874, p. 238.) This may be collated with the lines in Walt Whitman's *Salut au Monde*—

> Toward all
> I raise high the perpendicular hand,—I make the signal.

The Natchez in 1682 made signals of friendship to La Salle's party by the joining of the two hands of the signalist, much embarrassing Tonty, La Salle's lieutenant, in command of the advance in the descent of the Mississippi, who could not return the signal, having but one hand. His men responded in his stead. (Margry, *Decouvertes et Établissments des Français dans l'ouest et dans le sud de l'Amérique Septentrionale, &c.*)

QUESTION.

——— I do not know you. Who are you?

After halting a party coming: Right hand raised, palm in front and slowly moved to the right and left. [Answered by tribal sign.] (Marcy's *Prairie Traveler, loc. cit.*, 214.) Fig. 336. In this illustration the answer is made by giving the tribal sign for Pani.

——— To inquire if coming party is peaceful.

Raise both hands, grasped in the manner of shaking hands, or by locking the two forefingers firmly while the hands are held up. If friendly they will respond with the same signal. (Marcy's *Prairie Traveler, loc. cit.*, 214.)

SUBMISSION.

The United States steamer Saranac in 1874, cruising in Alaskan waters, dropped anchor in July, 1874, in Freshwater Harbor, back of Sitka, in latitude 59° north. An armed party landed at a Tlinkit village, deserted by all the inhabitants except one old man and two women, the latter seated at the feet of the former. The man was in great fear, turned his back and held up his hands as a sign of utter helplessness. (Extract from notes kindly furnished by Lieutenant-Commander WM. BAINBRIDGE HOFF, U. S. N., who was senior aid to Rear-Admiral Pennock, on the cruise mentioned.)

SURRENDER.

The palm of the hand is held toward the person [to whom the surrender is made]. (*Long.*)

Hold the palm of the hand toward the person as high above the head as the arm can be raised. (*Dakota* I.)

SIGNALS IN WHICH OBJECTS ARE USED IN CONNECTION WITH PERSONAL ACTION.

BUFFALO DISCOVERED. See also NOTES ON CHEYENNE AND ARAPAHO SIGNALS.

When the Ponkas or Omahas discover buffalo the watcher stands erect on the hill, with his face toward the camp, holding his blanket with an end in each hand, his arms being stretched out (right and left) on a line with shoulders. (*Dakota* VIII; *Omaha* I; *Ponka* I.) See Fig. 337.

Same as (*Omaha* I), and (*Ponka* I); with the addition that after the blanket is held out at arm's length the arms are crossed in front of the body. (*Dakota* I.)

CAMP!

When it is intended to encamp, a blanket is elevated upon a pole so as to be visible to all the individuals of a moving party. (*Dakota* VIII.)

COME! TO BECKON TO A PERSON.

Hold out the lower edge of the robe or blanket, then wave it in to the legs. This is made when there is a desire to avoid general observation. (*Matthews.*)

COME BACK!

Gather or grasp the left side of the unbuttoned coat (or blanket) with the right hand, and, either standing or sitting in position so that the signal can be seen, wave it to the left and right as often as may be necessary for the sign to be recognized. When made standing the person should not move his body. (*Dakota* I.)

DANGER. See also NOTES ON CHEYENNE AND ARAPAHO SIGNALS.

——— Horseman at a distance, galloping, passing and repassing, and crossing each other—*enemy comes.* But for notice of herd of buffalo, they gallop back and forward abreast—do not cross each other. (H. M. Brackenridge's *Views of Louisiana. Pittsburgh*, 1814, p. 250.)

——— Riding rapidly round in a circle, "Danger! Get together as quickly as possible." (Richard Irving Dodge, lieutenant-colonel United States Army, *The Plains of the Great West. New York,* 1877, p. 368.)

——— Point the right index in the direction of the danger, and then throw the arm over the front of the body diagonally, so that the hand rests near the left shoulder, back outward. If the person to be notified of the danger should be in the rear precede the above signal with that

FIG. 337.—Signal for "buffalo discovered.

Fig. 338.—Signal of discovery or alarm.

for "*Attention.*" This signal can also be made with a blanket, properly grasped so as to form a long narrow roll. Perhaps this signal would more properly belong under "*Caution,*" as it would be used to denote the presence of a dangerous beast or snake, and not that of a human enemy. (*Dakota* I.)

——Passing and repassing one another, either on foot or mounted, is used as a war-signal; which is expressed in the Hidatsa—mąkimakä'da-halidié. (*Mandan and Hidatsa* I.)

DIRECTION.

——Pass around that place.

Point the folded blanket in the direction of the object or place to be avoided, then draw it near the body, and wave it rapidly several times in front of the body only, and then throwing it out toward the side on which you wish the person to approach you, and repeat a sufficient number of times for the signal to be understood. (*Dakota* I.)

DISCOVERY.

The discovery of enemies, game, or anything else, is announced by riding rapidly to and fro, or in a circle. The idea that there is a difference in the signification of these two directions of riding appears, according to many of the Dakota Indians of the Missouri Valley, to be erroneous. Parties away from their regular encampment are generally in search of some special object, such as game, or of another party, either friendly or hostile, which is generally understood, and when that object is found, the announcement is made to their companions in either of the above ways. The reason that a horseman may ride from side to side is, that the party to whom he desires to communicate may be at a particular locality, and his movement—at right angles to the direction to the party—would be perfectly clear. Should the party be separated into smaller bands, or have flankers or scouts at various points, the only way in which the rider's signal could be recognized as a motion from side to side, by all the persons to whom the signal was directed, would be for him to ride in a circle, which he naturally does. (*Dakota* VI, VII, VIII.) Fig. 338.

The latter was noticed by Dr. Hoffman in 1873, on the Yellowstone River, while attached to the Stanley Expedition. The Indians had again concentrated after their first repulse by General Custer, and taken possession of the woods and bluffs on the opposite side of the river. As the column came up, one Indian was seen upon a high bluff to ride rapidly round in a circle, occasionally firing off his revolver. The signal announced the discovery of the advancing force, which had been expected, and he could be distinctly seen from the surrounding region. As many of the enemy were still scattered over the neighborhood, some of them would not have been able to recognize this signal had he ridden to and from an observer, but the circle produced a lateral movement visible from any point.

——— Of enemies, or other game than Buffalo. See also NOTES ON CHEYENNE AND ARAPAHO SIGNALS.

The discovery of enemies is indicated by riding rapidly around in a circle, so that the signal could be seen by their friends, but out of sight of the discovered enemy. (*Dakota* I.)

When enemies are discovered, or other game than buffalo, the sentinel waves his blanket over his head up and down, holding an end in each hand. (*Omaha* I; *Ponka* I.)

——— Of game, wood, water, &c.

This is communicated by riding rapidly forward and backward on the top of the highest hill. The same would be communicated with a blanket by waving it right and left, and then directly toward the game or whatever the party might be searching for, indicating that it is not to the right or to the left, but directly in front. (*Dakota* I.)

DRILL, MILITARY.

"It is done by signals, devised after a system of the Indian's own invention, and communicated in various ways.

"Wonderful as the statement may appear, the signaling on a bright day, when the sun is in the proper direction, is done with a piece of looking-glass held in the hollow of the hand. The reflection of the sun's rays thrown on the ranks communicates in some mysterious way the wishes of the chief. Once standing on a little knoll overlooking the valley of the South Platte, I witnessed almost at my feet a drill of about one hundred warriors by a Sioux chief, who sat on his horse on a knoll opposite me, and about two hundred yards from his command in the plain below. For more than half an hour he commanded a drill, which for variety and promptness of action could not be equaled by any civilized cavalry of the world. All I could see was an occasional movement of the right arm. He himself afterwards told me that he used a looking-glass." (Dodge's *Plains of the Great West*, *loc. cit.*, pp. 307, 308.)

FRIENDSHIP.

If two Indians [of the plains] are approaching one another on horseback, and they may, for instance, be one mile apart, or as far as they can see each other. At that safe distance one wants to indicate to the other that he wishes to be friendly. He does this by turning his horse around and traveling about fifty paces back and forth, repeating this two or three times; this shows to the other Indian that he is not for hostility, but for friendly relations. If the second Indian accepts this proffered overture of friendship, he indicates the same by locking the fingers of both hands as far as to the first joints, and in that position raises his hands and lets them rest on his forehead with the palms

either in or out, indifferently, as if he were trying to shield his eyes from the excessive light of the sun. This implies, "I, too, am for peace," or "I accept your overture." (*Sac, Fox, and Kickapoo* I.) It is interesting in this connection to note the reception of Father Marquette by an Illinois chief who is reported to have raised his hands to his eyes as if to shield them from overpowering splendor. That action was supposed to be made in a combination of humility and admiration, and a pretended inability to gaze on the face of the illustrious guest has been taken to be the conception of the gesture, which in fact was probably only the holding the interlocked hands in the most demonstrative posture. An oriental gesture in which the flat hand is actually interposed as a shield to the eyes before a superior is probably made with the poetical conception erroneously attributed to the Indian.

The display of green branches to signalize friendly or pacific intentions does not appear to have been noticed among the North American Indians by trustworthy observers. Captain Cook makes frequent mention of it as the ceremonial greeting among islands he visited. See his *Voyage toward the South Pole. London*, 1784, Vol. II, pp. 30 and 35. Green branches were also waved in signal of *friendship* by the natives of the island of New Britain to the members of the expedition in charge of Mr. Wilfred Powell in 1878. *Proceedings of the Royal Geological Society*, February, 1881, p. 89.

HALT!

——— Stand there! he is coming this way.

Grasp the end of the blanket or robe; wave it downward several times. (*Omaha* I.)

——— To inquire disposition.

Wave the folded blanket to the right and left in front of the body, then point toward the person or persons approaching, and carry it from a horizontal position in front of the body rapidly downward and upward several times. (*Dakota* I.)

MANY.

Wave the blanket directly in front of the body upward and downward several times. Many of *anything*. (*Dakota* I.)

PEACE, COUPLED WITH INVITATION.

Motion of spreading a real or imaginary robe or skin on the ground. Noticed by Lewis and Clark on their first meeting with the Shoshoni in 1805. (*Lewis and Clark's Travels*, &c., London, 1817, vol. ii, p. 74.) This signal is more particularly described as follows: Grasp the blanket by the two corners with the hands, throw it above the head, allowing it to unfold as it falls to the ground as if in the act of spreading it.

QUESTION.

The ordinary manner of opening communication with parties known or supposed to be hostile is to ride toward them in zigzag manner, or to ride in a circle. (Custer's *My Life on the Plains*, *loc. cit.*, p. 58.)

This author mentions (p. 202) a systematic manner of waving a blanket, by which the son of Satana, the Kaiowa chief, conveyed information to him, and a similar performance by Yellow Bear, a chief of the Arapahos (p. 219), neither of which he explains in detail.

——— I do not know you. Who are you?

Point the folded blanket at arm's length toward the person, and then wave it toward the right and left in front of the face. You—I don't know. Take an end of the blanket in each hand, and extend the arms to full capacity at the sides of the body, letting the other ends hang down in front of the body to the ground, means, Where do you come from? or who are you? (*Dakota* I.)

SAFETY. ALL QUIET. See NOTES ON CHEYENNE AND ARAPAHO SIGNALS.

SURRENDER.

Hold the folded blanket or a piece of cloth high above the head. "This really means 'I want to die right now.'" (*Dakota* I.)

SURROUNDED, We are.

Take an end of the blanket in each hand, extend the arms at the sides of the body, allowing the blanket to hang down in front of the body, and then wave it in a circular manner. (*Dakota* I.)

SIGNALS MADE WHEN THE PERSON OF THE SIGNALIST IS NOT VISIBLE.

Those noted consist of SMOKE, FIRE, or DUST signals.

SMOKE SIGNALS GENERALLY.

They [the Indians] had abandoned the coast, along which bale-fires were left burning and sending up their columns of smoke to advise the distant bands of the arrival of their old enemy. (Schoolcraft's *History*, &c., vol. iii, p. 35, giving a condensed account of De Soto's expedition.)

"Their systems of telegraphs are very peculiar, and though they might seem impracticable at first, yet so thoroughly are they understood by the savages that it is availed of frequently to immense advantage. The most remarkable is by raising smokes, by which many important facts are communicated to a considerable distance and made intelligible by the manner, size, number, or repetition of the smokes, which are

commonly raised by firing spots of dry grass." (Josiah Gregg's *Commerce of the Prairies. New York*, 1844, vol. ii, p. 286.)

The highest elevations of land are selected as stations from which signals with smoke are made. These can be seen at a distance of from twenty to fifty miles. By varying the number of columns of smoke different meanings are conveyed. The most simple as well as the most varied mode, and resembling the telegraphic alphabet, is arranged by building a small fire, which is not allowed to blaze; then by placing an armful of partially green grass or weeds over the fire, as if to smother it, a dense white smoke is created, which ordinarily will ascend in a continuous vertical column for hundreds of feet. Having established a current of smoke, the Indian simply takes his blanket and by spreading it over the small pile of weeds or grass from which the smoke takes its source, and properly controlling the edges and corners of the blanket, he confines the smoke, and is in this way able to retain it for several moments. By rapidly displacing the blanket, the operator is enabled to cause a dense volume of smoke to rise, the length or shortness of which, as well as the number and frequency of the columns, he can regulate perfectly, simply by a proper use of the blanket. (Custer's *My Life on the Plains, loc. cit.*, p. 187.)

They gathered an armful of dried grass and weeds, which were placed and carried upon the highest point of the peak, where, everything being in readiness, the match was applied close to the ground; but the blaze was no sooner well lighted and about to envelop the entire amount of grass collected than it was smothered with the unlighted portion. A slender column of gray smoke then began to ascend in a perpendicular column. This was not enough, as it might be taken for the smoke rising from a simple camp-fire. The smoldering grass was then covered with a blanket, the corners of which were held so closely to the ground as to almost completely confine and cut off the column of smoke. Waiting a few moments, until the smoke was beginning to escape from beneath, the blanket was suddenly thrown aside, when a beautiful balloon-shaped column puffed upward like the white cloud of smoke which attends the discharge of a field-piece. Again casting the blanket on the pile of grass, the column was interrupted as before, and again in due time released, so that a succession of elongated, egg-shaped puffs of smoke kept ascending toward the sky in the most regular manner. This bead-like column of smoke, considering the height from which it began to ascend, was visible from points on the level plain fifty miles distant. (*Ib.*, p. 217.)

The following extracts are made from Fremont's *First and Second Expeditions*, 1842–3–4, Ex. Doc., 28th Cong. 2d Session, Senate, Washington, 1845:

"Columns of smoke rose over the country at scattered intervals—signals by which the Indians here, as elsewhere, communicate to each other that enemies are in the country," p. 220. This was January 18, 1844, in the vicinity of Pyramid Lake, and perhaps the signalists were Pai-Utes.

"While we were speaking, a smoke rose suddenly from the cottonwood grove below, which plainly told us what had befallen him [Tabeau]; it was raised to inform the surrounding Indians that a blow had been struck, and to tell them to be on their guard," p. 268, 269. This was on May 5, 1844, near the Rio Virgen, Utah, and was narrated of "Diggers," probably Chemehuevas.

ARRIVAL OF A PARTY AT AN APPOINTED PLACE, WHEN ALL IS SAFE.

This is made by sending upward one column of smoke from a fire partially smothered by green grass. This is only used by previous agreement, and if seen by friends of the party, the signal is answered in the same manner. But should either party discover the presence of enemies, no signal would be made, but the fact would be communicated by a runner. (*Dakota* I.)

SUCCESS OF A WAR PARTY.

Whenever a war party, consisting of either Pima, Papago, or Maricopa Indians, returned from an expedition into the Apache country, their success was announced from the first and most distant elevation visible from their settlements. The number of scalps secured was shown by a corresponding number of columns of smoke, arranged in a horizontal line, side by side, so as to be distinguishable by the observers. When the returning party was unsuccessful, no such signals were made. (*Pima and Papago* I.) Fig. 339. A similar custom appears to have existed among the Ponkas, although the custom has apparently been discontinued by them, as shown in the following proper name: Cú-de gá-xe, Smoke maker; He who made a smoke by burning grass returning from war.

SMOKE SIGNALS OF THE APACHES.

The following information was obtained by Dr. W. J. HOFFMAN, from the Apache chiefs named on page 407, under the title of TINNEAN, (*Apache* I):

The materials used in making smoke of sufficient density and color consist of pine or cedar boughs, leaves and grass, which can nearly always be obtained in the regions occupied by the Apaches of Northern New Mexico. These Indians state that they employ but three kinds of signals, each of which consists of columns of smoke, numbering from one to three or more.

ALARM.

This signal is made by causing three or more columns of smoke to ascend, and signifies danger or the approach of an enemy, and also requires the concentration of those who see them. These signals are communicated from one camp to another, and the most distant bands are guided by their location. The greater the haste desired the greater

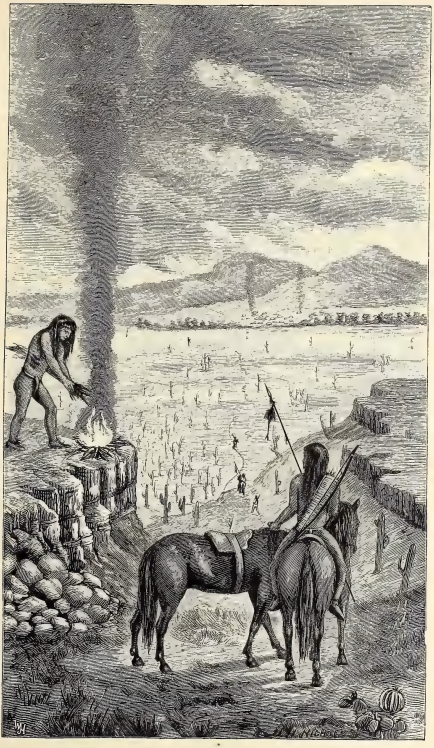

Fig. 339.—Signal of successful war-party.

the number of columns of smoke. These are often so hastily made that they may resemble puffs of smoke, and are caused by throwing heaps of grass and leaves upon the embers again and again.

ATTENTION.

This signal is generally made by producing one continuous column, and signifies attention for several purposes, viz, when a band had become tired of one locality, or the grass may have been consumed by the ponies, or some other cause necessitated removal, or should an enemy be reported, which would require further watching before a decision as to future action would be made. The intention or knowledge of anything unusual would be communicated to neighboring bands by causing one column of smoke to ascend.

ESTABLISHMENT OF A CAMP; QUIET; SAFETY.

When a removal of camp has been made, after the signal for ATTENTION has been given, and the party have selected a place where they propose to remain until there may be a necessity or desire for their removal, two columns of smoke are made, to inform their friends that they propose to remain at that place. Two columns are also made at other times during a long continued residence, to inform the neighboring bands that a camp still exists, and that all is favorable and quiet.

FOREIGN SMOKE SIGNALS.

The following examples of smoke signals in foreign lands are added for comparison.

Miss Haigh, speaking of the Guanches of the Canary Islands at the time of the Spanish conquest, says: "When an enemy approached, they alarmed the country by raising a thick smoke or by whistling, which was repeated from one to another. This latter method is still in use among the people of Teneriffe, and may be heard at an almost incredible distance." (*Trans. Eth. Soc. Lond.* vii, 1869, sec. ser., pp. 109, 110.)

"The natives have an easy method of telegraphing news to their distant friends. When Sir Thomas Mitchell was traveling through Eastern Australia he often saw columns of smoke ascending through the trees in the forests, and he soon learned that the natives used the smoke of fires for the purpose of making known his movements to their friends. Near Mount Frazer he observed a dense column of smoke, and subsequently other smokes arose, extending in a telegraphic line far to the south, along the base of the mountains, and thus communicating to the natives who might be upon his route homeward the tidings of his return.

"When Sir Thomas reached Portland Bay he noticed that when a whale appeared in the bay the natives were accustomed to send up a column

of smoke, thus giving timely intimation to all the whalers. If the whale should be pursued by one boat's crew only it might be taken; but if pursued by several, it would probably be run ashore and become food for the blacks." (Smyth, *loc. cit.*, vol. 1, pp. 152, 153, quoting Maj. T. L. Mitchell's *Eastern Australia*, vol. ii, p. 241.)

Jardine, writing of the natives of Cape York, says that a "communication between the islanders and the natives of the mainland is frequent; and the rapid manner in which news is carried from tribe to tribe, to great distances, is astonishing. I was informed of the approach of Her Majesty's Steamer Salamander, on her last visit, two days before her arrival here. Intelligence is conveyed by means of fires made to throw up smoke in different forms, and by messengers who perform long and rapid journeys." (Smyth, *loc. cit.*, vol. 1, p. 153, quoting from *Overland Expedition*, p. 85.)

Messengers in all parts of Australia appear to have used this mode of signaling. In Victoria, when traveling through the forests, they were accustomed to raise smoke by filling the hollow of a tree with green boughs and setting fire to the trunk at its base; and in this way, as they always selected an elevated position for the fire when they could, their movements were made known.

When engaged in hunting, when traveling on secret expeditions, when approaching an encampment, when threatened with danger, or when foes menaced their friends, the natives made signals by raising a smoke. And their fires were lighted in such a way as to give forth signals that would be understood by people of their own tribe and by friendly tribes. They exhibited great ability in managing their system of telegraphy; and in former times it was not seldom used to the injury of the white settlers, who at first had no idea that the thin column of smoke rising through the foliage of the adjacent bush, and raised perhaps by some feeble old woman, was an intimation to the warriors to advance and attack the Europeans. (R. Brough Smyth, F. L. S., F. G. S., *The Aborigines of Victoria. Melbourne*, 1878, vol. i, pp. 152, 153.)

FIRE ARROWS.

"Travelers on the prairie have often seen the Indians throwing up signal lights at night, and have wondered how it was done. * * * They take off the head of the arrow and dip the shaft in gunpowder, mixed with glue. * * * The gunpowder adheres to the wood, and coats it three or four inches from its end to the depth of one-fourth of an inch. Chewed bark mixed with dry gunpowder is then fastened to the stick, and the arrow is ready for use. When it is to be fired, a warrior places it on his bowstring and draws his bow ready to let it fly; the point of the arrow is then lowered, another warrior lights the dry bark, and it is shot high in the air. When it has gone up a little

distance, it bursts out into a flame, and burns brightly until it falls to the ground. Various meanings are attached to these fire-arrow signals. Thus, one arrow meant, among the Santees, 'The enemy are about'; two arrows from the same point, 'Danger'; three, 'Great danger'; many, 'They are too strong, or we are falling back'; two arrows sent up at the same moment, 'We will attack'; three, 'Soon'; four, 'Now'; if shot diagonally, 'In that direction.' These signals are constantly changed, and are always agreed upon when the party goes out or before it separates. The Indians send their signals very intelligently, and seldom make mistakes in telegraphing each other by these silent monitors. The amount of information they can communicate by fires and burning arrows is perfectly wonderful. Every war party carries with it bundles of signal arrows." (*Belden, The White Chief; or Twelve Years among the Wild Indians of the Plains. Cincinnati and New York*, 1871, pp. 106, 107.)

With regard to the above, it is possible that white influence has been felt in the mode of signaling as well as in the use of gunpowder, but it would be interesting to learn if any Indians adopted a similar expedient before gunpowder was known to them. They frequently used arrows, to which flaming material was attached, to set fire to the wooden houses of the early colonists. The Caribs were acquainted with this same mode of destruction as appears by the following quotation:

"Their arrows were commonly poisoned, except when they made their military excursions by night; on these occasions they converted them into instruments of still greater mischief; for, by arming the points with pledgets of cotton dipped in oil, and set on fire, they fired whole villages of their enemies at a distance." (*Alcedo. The Geograph. and Hist. Dict. of America and the West Indies.* Thompson's trans. *London*, 1812, Vol. I, p. 314.)

DUST SIGNALS.

When an enemy, game, or anything else which was the special object of search is discovered, handfulls of dust are thrown into the air to announce that discovery. This signal has the same general signification as when riding to and fro, or, round in a circle on an elevated portion of ground, or a bluff. (*Dakota* VII, VIII.)

When any game or any enemy is discovered, and should the sentinel be without a blanket, he throws a handful of dust up into the air. When the Brulés attacked the Ponkas, in 1872, they stood on the bluff and threw up dust. (*Omaha* I; *Ponka* I.)

There appears to be among the Bushmen a custom of throwing up sand or earth into the air when at a distance from home and in need of help of some kind from those who were there. (*Miss L. C. Lloyd,, MS. Letter*, dated July 10, 1880, from Charlton House, Mowbray, near Cape Town, Africa.)

NOTES ON CHEYENNE AND ARAPAHO SIGNALS.

The following information was obtained from WA-UP' (*Bobtail*), MO-HI'-NUK-MA-HA'-IT (*Big Horse*), Cheyennes, and O-QO-HIS'-SA (*The Mare*, better known as "Little Raven"), and NA'-WATC (*Left Hand*), Arapahos, chiefs and members of a delegation who visited Washington, D. C., in September, 1880, in the interest of their tribes dwelling in Indian Territory:

A party of Indians going on the war-path leave camp, announcing their project to the remaining individuals and informing neighboring friends by sending runners. A party is not systematically organized until several days away from its headquarters, unless circumstances should require immediate action. The pipe-bearers are appointed, who precede the party while on the march, carrying the pipes, and no one is allowed to cross ahead of these individuals, or to join the party by riding up before the head of the column, as it would endanger the success of the expedition. All new arrivals fall in from either side or the rear. Upon coming in sight of any elevations of land likely to afford a good view of the surrounding country the warriors come to a halt and secrete themselves as much as possible. The scouts who have already been selected, advance just before daybreak to within a moderate distance of the elevation to ascertain if any of the enemy has preceded them. This is only discovered by carefully watching the summit to see if any objects are in motion; if not, the flight of birds is observed, and if any should alight upon the hill or butte it would indicate the absence of anything that might ordinarily scare them away. Should a large bird, as a raven, crow, or eagle, fly toward the hill-top and make a sudden swerve to either side and disappear, it would indicate the presence of something sufficient to require further examination. When it is learned that there is reason to suspect an enemy the scout, who has all the time been closely watched by the party in the rear, makes a signal for them to lie still, signifying *danger* or *caution*. It is made by grasping the blanket with the right hand and waving it earthward from a position in front of and as high as the shoulder. This is nearly the same as civilized Americans use the hand for a similar purpose in battle or hunting to direct "lie quiet"!

Should the hill, however, be clear of any one, the Indian will ascend slowly, and under cover as much as possible, and gain a view of the country. If there is no one to be seen, the blanket is grasped and waved horizontally from right to left and back again repeatedly, showing a clear surface. If the enemy is discovered, the scout will give the *alarm* by running down the hill, upon a side visible to the watchers, in a zig-zag manner, which communicates the state of affairs.

Should any expedition or advance be attempted at night, the same signals as are made with the blanket are made with a firebrand, which is constructed of a bunch of grass tied to a short pole.

When a war party encamps for a night or a day or more, a piece of wood is stuck into the ground, pointing in the direction pursued, with a number of cuts, notches, or marks corresponding to the number of days which the party spent after leaving the last camp until leaving the present camp, serving to show to the recruits to the main party the course to be followed, and the distance.

A hunting party in advancing takes the same precautions as a war party, so as not to be surprised by an enemy. If a scout ascends a prominent elevation and discovers no game, the blanket is grasped and waved horizontally from side to side at the height of the shoulders or head; and if game is discovered the Indian rides back and forth (from left to right) a short distance so that the distant observers can view the maneuver. If a large herd of buffalo is found, the extent traveled over in going to and fro increases in proportion to the size of the herd. A quicker gait is traveled when the herd is very large or haste on the part of the hunters is desired.

It is stated that these Indians also use mirrors to signal from one elevation to another, but the system could not be learned, as they say they have no longer use for it, having ceased warfare (?).

SCHEME OF ILLUSTRATION.

In the following pages the scheme of graphic illustration, intended both to save labor and secure accuracy, which was presented in the *Introduction to the Study of Sign Language*, is reproduced with some improvements. It is given for the use of observers who may not see that publication, the material parts of which being included in the present paper it is not necessary that the former should now be furnished. The TYPES OF HAND POSITIONS were prepared for reference by the corresponding letters of the alphabet to avoid tedious description, should any of them exactly correspond, or by alteration, as suggested in the note following them. These, as well as the OUTLINES OF ARM POSITIONS, giving front and side outlines with arms pendant, were distributed in separate sheets to observers for their convenience in recording, and this will still be cheerfully done when request is made to the present writer. When the sheets are not accessible the TYPES can be used for graphic changes by tracing the one selected, or by a few words indicating the change, as shown in the EXAMPLES. The OUTLINES OF ARM POSITIONS can also be readily traced for the same use as if the sheets had been provided. It is hoped that this scheme, promoting uniformity in description and illustration, will be adopted by all observers who cannot be specially addressed.

Collaborators in the gestures of foreign uncivilized peoples will confer a favor by sending at least one photograph or sketch in native costume of a typical individual of the tribe, the gestures of which are reported upon, in order that it may be reproduced in the complete work. Such photograph or sketch need not be made in the execution of any particular gesture, which can be done by artists engaged on the work, but would be still more acceptable if it could be so made.

OUTLINES FOR ARM POSITIONS IN SIGN LANGUAGE.

The gestures, to be indicated by corrected positions of arms and by dotted lines showing the motion from the initial to the final positions (which are severally marked by an arrow-head and a cross—see EXAMPLES), will always be shown as they appear to an observer facing the gesturer, the front outline, Fig. 340, or side, Fig. 341, or both, being used as most convenient. The special positions of hands and fingers will be designated by reference to the TYPES OF HAND POSITIONS. For brevity in the written description, "hand" may be used for "right hand," when that one alone is employed in any particular gesture. When more convenient to use the profile figure in which the right arm is exhibited for a gesture actually made by the left hand and arm it can be done, the fact, however, being noted.

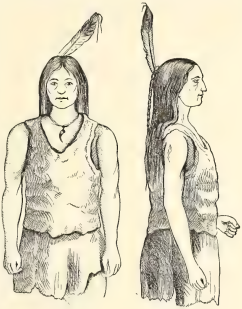

FIG. 340. FIG. 341.

In cases where the conception or origin of any sign is ascertained or suggested it should be annexed to the description, and when obtained from the gesturer will be so stated affirmatively, otherwise it will be considered to be presented by the observer. The graphic illustration of associated facial expression or bodily posture which may accentuate or qualify a gesture is necessarily left to the ingenuity of the contributor.

ORDER OF ARRANGEMENT.

The following order of arrangement for written descriptions is suggested. The use of a separate sheet or part sheet of paper for each sign described and illustrated would be convenient in the collation. It should always be affimatively stated whether the "conception or orgin" of the sign was procured from the sign-maker, or is suggested or inferred by the observer.

Word or idea expressed by Sign: .....

DESCRIPTION:

.....

.....

.....

CONCEPTION OR ORIGIN:

.....

Tribe: .....

Locality: .....

Date: ..... 188 .

.....

Observer.

TYPES OF HAND POSITIONS IN SIGN LANGUAGE.

A—Fist, palm outward, horizontal.

B—Fist, back outward, oblique upward.

C—Clinched, with thumb extended against forefinger, upright, edge outward.

D—Clinched, ball of thumb against middle of forefinger, oblique, upward, palm down.

E—Hooked, thumb against end of forefinger, upright, edge outward.

F—Hooked, thumb against side of forefinger, oblique, palm outward.

G—Fingers resting against ball of thumb, back upward.

H—Arched, thumb horizontal against end of forefinger, back upward.

I—Closed, except forefinger crooked against end of thumb, upright, palm outward.

J—Forefinger straight, upright, others closed, edge outward.

K—Forefinger obliquely extended upward, others closed, edge outward.

L—Thumb vertical, forefinger horizontal, others closed, edge outward.

FIG. 342a.

M—Forefinger horizontal, fingers and thumb closed, palm outward.

N—First and second fingers straight upward and separated, remaining fingers and thumb closed, palm outward.

O—Thumb, first and second fingers separated, straight upward, remaining fingers curved edge outward.

P—Fingers and thumb partially curved upward and separated, knuckles outward.

Q—Fingers and thumb, separated, slightly curved, downward.

R—Fingers and thumb extended straight, separated, upward.

S—Hand and fingers upright, joined, back outward,

T—Hand and fingers upright, joined, palm outward.

U—Fingers collected to a point, thumb resting in middle.

V—Arched, joined, thumb resting near end of forefinger, downward.

W—Hand horizontal, flat, palm downward.

X—Hand horizontal, flat, palm upward.

Y—Naturally relaxed, normal; used when hand simply follows arm with no intentional disposition.

FIG. 342b.

NOTE CONCERNING THE FOREGOING TYPES.

The positions are given as they appear to an observer facing the gesturer, and are designed to show the relations of the fingers to the hand rather than the positions of the hand relative to the body, which must be shown by the outlines (see OUTLINES OF ARM POSITIONS) or description. The right and left hands are figured above without discrimination, but in description or reference the right hand will be understood when the left is not specified. The hands as figured can also with proper intimation be applied with changes either upward, downward, or inclined to either side, so long as the relative positions of the fingers are retained, and when in that respect no one of the types exactly corresponds with a sign observed, modifications may be made by pen or pencil on that one of the types, or a tracing of it, found most convenient, as indicated in the EXAMPLES, and referred to by the letter of the alphabet under the type changed, with the addition of a numeral —*e. g.*, A 1, and if that type, *i. e.*, A, were changed a second time by the observer (which change would necessarily be drawn on another sheet of types or another tracing of a type selected when there are no sheets provided), it should be referred to as A 2.

EXAMPLES.

Fig. 343.

Word or idea expressed by sign: To cut, with an ax.

DESCRIPTION.

With the right hand flattened (X changed to right instead of left), palm upward, move it downward to the left side repeatedly from different elevations, ending each stroke at the same point. Fig. 343.

CONCEPTION OR ORIGIN.

From the act of felling a tree.

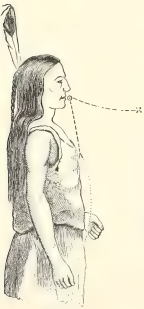

Fig. 344.

Word or idea expressed by sign: A lie.

DESCRIPTION.

Touch the left breast over the heart, and pass the hand forward from the mouth, the two first fingers only being extended and slightly separated (L, 1—with thumb resting on third finger, Fig. 344 *a*). Fig. 344.

L 1, Fig. 344*a*.

CONCEPTION OR ORIGIN.

Double-tongued.

FIG. 345.

Word or idea expressed by sign: To ride.

DESCRIPTION.

Place the first two fingers of the right hand, thumb extended (N 1, Fig. 345*a*) downward, astraddle the first two joined and straight fingers of the left (T 1, Fig. 345*b*), sidewise, to the right, then make several short, arched movements forward with hands so joined. Fig. 345.

N 1, FIG. 345*a*.

CONCEPTION OR ORIGIN.

The horse mounted and in motion.

T 1, FIG. 345 *b*.

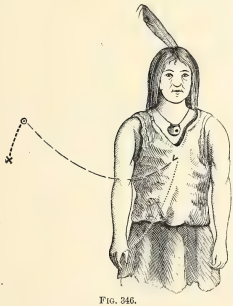

FIG. 346.

Word or idea expressed by signs: I am going home.

DESCRIPTION.

(1) Touch the middle of the breast with the extended index (K), then (2) pass it slowly downward and outward to the right, and when the hand is at arm's length, at the height of the shoulder, (3) clinch it (A) suddenly and throw it edgewise toward the ground. Fig. 346.

CONCEPTION OR ORIGIN.

(1) I, personality; (2) motion and direction; (3) locality of my possessions—home.

EXPLANATION OF MARKS.

The following indicative marks are used in the above examples:

---------- Dotted lines indicate movements to place the hand and arm in position to commence the sign and not forming part of it.

---------- Short dashes indicate the course of hand employed in the sign, when made rapidly.

- - - - - - - - - - - - Longer dashes indicate a less rapid movement.

— — — — Broken lines represent slow movement.

> Indicates commencement of movement in representing sign, or part of sign.

× Represents the termination of movements.

⊙ Indicates the point in the gesture line at which the hand position is changed.

SMITHSONIAN INSTITUTION——BUREAU OF ETHNOLOGY.

CATALOGUE

OF

LINGUISTIC MANUSCRIPTS

IN THE

LIBRARY OF THE BUREAU OF ETHNOLOGY.

BY

JAMES C. PILLING.

CATALOGUE OF LINGUISTIC MANUSCRIPTS IN THE LIBRARY OF THE BUREAU OF ETHNOLOGY.

By James C. Pilling.

Mr. Henry R. Schoolcraft, while engaged in the preparation of his work—"Information respecting the History, Condition, and Prospects of the Indian Tribes of the United States"—sent to various persons residing among the Indians a "Comparative Vocabulary of the Languages of the Indian Tribes of the United States," a quarto paper of 25 pages, comprising 350 words, and the numerals one to one billion. The returns from this were for the most part incorporated in his work; a few, however, found their way into the collection of the Smithsonian Institution.

In 1853–'54, Mr. George Gibbs, while engaged under Gov. Isaac I. Stevens in "Explorations for a route for the Pacific Railroad near the 47th and 49th parallels of north latitude," became interested in the study of the languages of the Indians inhabiting the Northwest, and collected many vocabularies. To further extend this work, he prepared and had printed a folio paper of three leaves entitled "A vocabulary of 180 words which it is desired to collect in the different languages and dialects throughout the Pacific Coast for publication by the Smithsonian Institute at Washington."

These were sent to such persons as, in his judgment, were competent to furnish the material desired, and many of them, filled or partly filled, were returned to him. A second edition of this vocabulary, 6 ll., folio, was issued.

In 1863 there was published by the Smithsonian Institution a pamphlet with the following title:

Smithsonian Miscellaneous Collections. | —160— | Instructions | for research relative to the | Ethnology and Philology | of | America. | Prepared for the Smithsonian Institution. | By | George Gibbs. | Washington: | Smithsonian Institution: | March, 1863.

2 p. ll., pp. 1–51. 8°.

In his introductory remarks, Professor Henry thus states the object of the paper:

"The Smithsonian Institution is desirous of extending and completing its collections of facts and materials relative to the Ethnology, Archæology, and Philology of the races of mankind inhabiting, either now or at any previous period, the continent of America, and earnestly solicits

the coöperation in this object of all officers of the United States Government, and travellers or residents who may have it in their power to render any assistance."

Under the head of Philology, Mr. Gibbs gave a brief account of some of the peculiarities of Indian languages, with general directions for the best method of collecting certain words; a simple and practical alphabet; and a vocabulary in English, Spanish, French, and Latin of 211 words. Speaking of the latter, he says:

"In view of the importance of a uniform system in collecting words of the various Indian languages of North America, adapted to the use of officers of the government, travellers, and others, the following is recommended as a STANDARD VOCABULARY. It is mainly the one prepared by the late Hon. Albert Gallatin, with a few changes made by Mr. Hale, the Ethnologist of the United States Exploring Expedition, and is adopted as that upon which nearly all the collections hitherto made for the purpose of comparison have been based. For the purpose of ascertaining the more obvious relations between the various members of existing families this number is deemed sufficient. The remote affinities must be sought in a wider research, demanding a degree of acquaintance with their languages beyond the reach of transient visitors."

The vocabulary given in this paper was separately printed on writing paper, 10 ll., 4°, and reprinted, 6 ll., folio, and was distributed widely among the missionaries, Indian agents, travelers, and local collectors in ethnology, and has served a valuable purpose, resulting in the collection by the Smithsonian Institution of a large number of vocabularies, comprising many of the languages and dialects of the Indian tribes of the United States, British America, and Mexico.

This material, as it was received, was placed in the hands of Mr. Gibbs for revision and classification—a work in which he was engaged at the time of his death, which occurred before any of it was published.

In 1876, Professor Henry turned this material over to Maj. J. W. Powell, then in charge of the United States Geographical and Geological Survey of the Rocky Mountain Region, to be consolidated and published in connection with like material collected by himself and his assistants while among the Indians of the western portion of the United States. A number were accordingly published in the "Contributions to North American Ethnology," Vols. I and III, a quarto series issued by the Survey.

Wishing to extend the work already begun by the Smithsonian Institution, Major Powell, in 1877, prepared the following paper:

Introduction | to the | Study of Indian Languages, | with words, phrases, and sentences to be collected. | By J. W. Powell. | Washington: | Government Printing Office. | 1877.

Pp. 1–104, 10 ruled ll., 4°.

In his opening remarks, referring to the manuscripts derived from the distribution of Mr. Gibbs' paper, the author says: "It has, in fact,

greatly stimulated investigation, giving wiser direction to inquiry, and the results have abundantly proved the value of the 'Instructions' and the wisdom of its publication; and it serves to mark an epoch in the history of ethnographic investigation in America. The material which has thus been accumulated is of great amount, and its study has led to such important conclusions that it is deemed wise to prepare a new system of instruction, more comprehensive in plan and more elaborate in detail. First, it is found necessary to enlarge the alphabet so as to include a greater number of sounds, which have been discovered in the North American languages, and to mark other letters with greater precision. Second, it is necessary to enlarge the vocabulary so as to modify it somewhat, as experience has dictated, so that new words may be collected. Third, it is desirable that many simple phrases and sentences should be given—so chosen as to bring out the more important characteristics of grammatic structure."

In the preparation of this paper, the alphabet was considered to be of prime importance. Concerning it, the author says: "After devoting much time to the consideration of the subject, and the examination of many alphabets devised by scholars and linguists, none was found against which there was not serious objections, and the author attempted to devise an alphabet which would contain all the supposed requirements; but there were many difficulties in the way, and many compromises to be made in weighing the various considerations. At this stage of the work he applied to the eminent philologist, Prof. W. D. Whitney, for assistance. After much consultation and the weighing of the many considerations arising from the large amount of manuscript material in the author's hands, Professor Whitney kindly prepared the following paper on the alphabet."

The words, phrases, and sentences to be collected are arranged in schedules, each preceded by instructions, and followed by blanks for additions, as follows:

I. Persons, 15 words.
II. Parts of the body, 103 words.
III. Relationships:
    Relationships arising from the first and second generations, 58 words.
    Relationships arising from the third generation, 224 words.
    Relationships arising from the fourth generation, 24 words.
    Names of children in order of birth, 26 words.
IV. Social organization.
V. Governmental organization, 22 words.
VI. Religion, 6 words.
VII. Disposal of the dead, 8 words.
VIII. Dress and ornaments, 39 words.
IX. Dwellings, 26 words.
X. Implements and utensils, 36 words.
    Basket-ware, 15 words.
    Woodenware, 7 words.
    Utensils of shell, horn, bone, &c., 5 words.
    Stone implements, 13 words.
    Pottery, &c., 11 words.

XI. Food, 6 words.
XII. Games and sports, 5 words.
XIII. Animals:
Mammals, 91 words.
Parts of the body, &c., of mammals, 36 words.
Birds, 192 words.
Parts of the body, &c., of birds, 26 words.
Fish, 12 words.
Parts of the body, &c., of fish, 12 words.
Reptiles, 6 words.
Insects, 11 words.
XIV. Trees, shrubs, fruits, &c., 8 words.
XV. The firmament, meteorologic and other physical phenomena and objects, 41 words.
XVI. Geographic terms, 8 words.
XVII. Geographic names.
XVIII. Colors, 13 words.
XIX. Numerals:
Cardinal numbers, 58 words (1–1000).
Ordinal numbers, 30 words.
Numeral adverbs denoting repetition of action, 23 words.
Multiplicatives, 22 words.
Distributives, 23 words.
XX. Measures.
XXI. Divisions of time, 29 words.
XXII. Standard of value.
XXIII. New words, 84 words.
XXIV. Phrases and sentences, 545 phrases, &c.

This paper was prepared with special reference to the wants of the collector, being printed on bond paper and bound in flexible cloth. It was widely distributed and, like that of Mr. Gibbs, resulted in the col lection of valuable linguistic material.

In 1879 Congress consolidated the various surveys, including that of the Rocky Mountain Region, into the United States Geological Survey, but made provision for continuing the publication of the Contributions to North American Ethnology under the direction of the Secretary of the Smithsonian Institution, and directed that the ethnologic material in Major Powell's hands be turned over to the Institution. Thus the Bureau of Ethnology of the Smithsonian Institution was organized, and Major Powell was placed at its head.

By this time the growing interest manifested in the study of North American linguistics rendered necessary the preparation of a new edition of the Introduction. In the words of the author:

"The progress made by various students, and the studies made by the author, alike require that a new edition be prepared to meet the more advanced wants and to embody the results of wider studies. Under these circumstances the present edition is published. It does not purport to be a philosophic treatment of the subject of language; it is not a comparative grammar of Indian tongues; it is simply a series of explanations of certain characteristics almost universally found by stu-

dents of Indian languages—the explanations being of such a character as experience has shown would best meet the wants of persons practically at work in the field on languages with which they are unfamiliar. The book is a body of directions for collectors.

"It is believed that the system of schedules, followed *seriatim*, will lead the student in a proper way to the collection of linguistic materials; that the explanations given will assist him in overcoming the difficulties which he is sure to encounter; and that the materials when collected will constitute valuable contributions to philology. It has been the effort of the author to connect the study of language with the study of other branches of anthropology, for a language is best understood when the habits, customs, institutions, philosophy—the subject-matter of thought embodied in the language—are best known. The student of language should be a student of the people who speak the language; and to this end the book has been prepared, with many hints and suggestions relating to other branches of anthropology."

The title of this publication is as follows:

Smithsonian Institution—Bureau of Ethnology | J. W. Powell Director | Introduction | to the | Study of Indian Languages | with | Words Phrases and Sentences to be Collected | By J. W. Powell | Second edition—with charts | Washington | Government Printing Office | 1880

Pp. i–xii, 1–228, and 8 ruled leaves. 4°.

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Experience had demonstrated the propriety of some changes in the alphabet and a considerable enlargement of the scheme as given in the first edition of the work, and in the second Major Powell has made many modifications. The schedule of relationship was so large that graphic representation was considered necessary, and charts were prepared which it was thought both the student and the Indian could follow it with comparative ease. Experience has shown that the idea was well founded.

As in the first edition, blank spaces were given after each schedule for such additions as might suggest themselves to the collector; and to further facilitate the work separate alphabet cards of convenient size accompanied the volume.

This publication has not been long enough in the hands of collectors to meet with great returns, though a sufficient number have been received, filled or partly filled, to justify the Bureau in anticipating, in the not distant future, the receipt of a body of material prepared according to scientific methods which, when published, will prove a valuable contribution to this branch of ethnologic research.

Abbott (G. H.). Vocabulary of the Coquille; 180 words.
3 ll. folio. Collected in 1858, at the Silets Indian Agency.

Anderson (Alexander C.). Concordance of the Athabascan Languages, with Notes.
12 ll. folio. Comparative vocabulary of 180 words of the following dialects: Chipwyan, Tacully, Klatskanai, Willopah, Upper Umpqua, Tootooten, Applegate Creek, Hopah Haynarger.

——— Notes on the Indians of the Northwest Coast.
12 ll. folio.

——— Vocabulary of the Klatskanai Dialect of the Tahculli, Athabasca; 180 words.
3 ll. folio.

Arny (*Gov.* W. F. M.). Vocabulary of the Navajo Indians.
10 ll. 4°. On Smithsonian form. Collected in 1874. Governor Arny was assisted by Prof. Valentine Friese and Rev. W. B. Forrey.

Arroyo de la Cuesta (*P.* Felipe). Idiomas Californios.
32 pp. folio. This manuscript, containing 12 short vocabularies, was copied from the original in Santa Barbara, Cal., by Mr. E. T. Murray. The following are the vocabularies: Esselen, or Huelel—Mutsun; San Antonio y San Miguel; San Luis Obispo; Nopthrinthres of San Juan Baptista—Yokuts; Canal de Santa Barbara; San Luis Rey; Karkin—Mutsun; Tuichun—Mutsun (?); Saclan; Suisun—Wintun; Hluimen, or Uhimen—Mutsun; Lathruunun—Yokuts.

Azpell (*Assist. Surg.* Thos. F.). Vocabulary of the Hoopa, and Klamath; 200 words each.
10 ll. 4°. On Smithsonian form. Collected in California in 1870.

Baer (John). Vocabularies of the Yerigen (Tchuktchi), 250 words; and of the Chaklock, 100 words.

10 ll. folio. Mr. Baer accompanied the Rogers Ex. Ex. The Yerigen words were collected in Glasenep Harbor, Straits of Seniavine, west side of Behring Straits. The Chaklock words from the inhabitants of the island of Chaklock, about two miles to the southward.

Balitz (Antoine). Vocabulary of the Aleuts; 211 words.

10 ll. 4°. On Smithsonian form. Collected in the Aleutian Islands in 1868.

Ballou (E.). Words, Phrases, and Sentences in the Shoshone Language.

162 pp. 4°. In Introduction to the Study of Indian Languages, 2 ed. Collected at the Shoshone and Bannock Agency, Wyoming Territory, 1880–1881. None of the schedules are neglected, and many are filled and additions made. Mr. Ballou has added much to the value of his manuscript by copious ethnologic notes.

Bannister (Henry M.). Vocabulary of the Malimoot, Kotzebue Sound; 200 words.

10 ll. 4°. On Smithsonian form.

Barnhardt (W. H.). Comparative Vocabulary of the Languages spoken by the Umpqua, Lower Rogue River, and Calapooa Indians; 160 words.

4 ll. folio.

Barnhart (—.). Vocabulary of the Kalapuya; 211 words.

6 ll. folio. On Smithsonian form.

——— Vocabulary of the Lower Rogue River Indians; 211 words.

6 ll. folio. On Smithsonian form.

Barker (J. C.). Vocabulary of the Indians of Santa Tomas Mission, Lower California; 150 words.

10 ll. 4°. On Smithsonian form. Collected in 1876.

Bartlett (John Russell). Vocabularies of the Cahita, Opate, and Tarahumara; 200 words each.

7 ll. folio.

——— Vocabulary of the Ceris; 180 words.

6 ll. folio. Taken by Mr. Bartlett from Hermosillo, a native, January, 1852.

——— Vocabulary of the Cochimi; 180 words.

6 ll. folio.

——— Vocabulary of the Coco Maricopa; 180 words.

6 ll. folio.

——— Vocabulary of the Coppermine Apaches; 150 words.

6 ll. folio. Obtained by Mr. Bartlett from Mancus Colorado, a chief of the Coppermine Apaches, July, 1851.

——— Vocabulary of the Diegeno; 150 words.

6 ll. folio.

——— Vocabulary of the Dieguina; 180 words.

6 ll. folio. These Indians resided for 20 miles along the coast in the neighborhood of San Diego.

——— Vocabulary of the Hum-mock-a-ha-vi; 180 words.

6 ll. folio.

——— Vocabulary of the Kioway; 200 words.

6 ll. folio. On Smithonian form. Collected from Esteban, a Mexican in the service of the Mexican Boundary Commission, who had been a captain seven years among the Comanches and Kioways in Texas.

Bartlett (John Russell). Vocabulary of the Piro.

6 ll. folio. On Smithsonian form. Collected from two of the principal men of the pueblo of Sineca, a few miles below El Paso del Norte.

——— Vocabulary of the Tigua.

6 ll. folio. On Smithsonian form. Collected from Santiago Ortiz (Ahebatu), head chief of Sineca, Isleta, &c.

——— Vocabulary of the Yaqui of Sonora.

6 ll. folio.

——— Vocabulary of the Yuma or Cuchan; 180 words.

6 ll. folio. The above material was collected by Mr. Bartlett while on the Mexican Boundary Commission.

Belden (*Lieut.* George P.). Vocabulary of the Chinook Jargon.

27 ll. 12°. Alphabetically arranged.

——— Dictionary of the Snake, Crow, and Sioux, alphabetically arranged.

182 pp. 8°. Collected in 1868.

Bennett (*Lieut. Col.* Clarence E.). Vocabulary of the Yuma; 211 words.

10 ll. 4°. On Smithsonian form. Collected at Fort Yuma, 1864.

Berendt (*Dr.* Carl Herman). Vocabulary of the Maya; 200 words.

6 ll. folio.

——— Comparative Vocabulary of the Mexican or Nahuatl and Maya Languages.

10 ll. 4°. On Smithsonian form, with a few additions.

Berson (F.). Vocabulary of the Clear Lake Indians, California.

8 ll. sm. 4°. Collected in November, 1851. Copy of the original furnished by M. Alex. Pinart.

——— Yuki-English and English-Yuki Dictionary.

45 pp. sm. 4° Collected in 1851 from a band of Indians fifty miles south of Clear Lake, California. Copy of the original furnished by M. Alex. Pinart.

Bierstadt (Albert). Vocabulary of the Sioux.

6 pp. folio. On Smithsonian form. Collected, 1863.

Bissell (George P.). Vocabulary of the Coos, or Kusa, Oregon.

46 pp. 4°. In Introduction to the Study of Indian Languages, 1st ed.

——— Vocabulary of the Umpqua.

5 ll. 4°. Collected in 1876.

Brackett (*Col.* A. G.). Vocabulary of the Absaraka, or Crow.

11 pp. folio. Collected at Fort Laramie, Wyoming, 1879.

Butcher (*Dr.* H. B.) *and* **Leyendecher** (John). Vocabulary of the Comanche Indians; 200 words.

6 ll. folio. Collected April, 1867.

Chamberlain (Montague). Words, Phrases, and Sentences in the Melicite (Malisit) Language, River St. John, New Brunswick.

In Introduction to Study of Indian Languages, 1st ed. Collected December, 1880.

Chapin (*Col.* G.). Vocabulary of the Sierra Blanco Apaches.

10 ll. 4°. On Smithsonian form. Collected in 1867, Camp Goodwin, Arizona.

Cheroki. Vocabulary of the Cherokee, or Tseloge; 88 words.

3 ll. folio. Collector unknown.

Cooper (*Dr.* J. G.). Vocabulary of the Gros Ventres and Blackfoot.

6 pp. folio. On Smithsonian form. Collected 1861.

Cooper (*Dr.* J. G.). Vocabulary of the Siksikhöä, or Blackfoot; 180 words.

7 pp. folio. Recorded March, 1861.

——— Vocabulary of the Tshihalish; 180 words.

6 ll. folio.

Corbusier (William H.). Vocabulary of the Apache-Mojave, or Yavape; and Apache-Yuma, or Tulkepa, with ethnopaphic notes.

54 pp. 4°. In Introduction to the Study of Indian Languages—nearly complete. Collected at the Rio Verde Agency, Arizona, 1873, '74, '75.

Corliss (*Capt.* A. W.). Vocabulary of the Lacotah, or Sioux, Brulè band.

50 pp. 4°. "Notes made while at Spotted Tail's Agency of Brulè Sioux Indians on the White River, in Dakota and Nebraska, in 1874." In Introduction to the Study of Indian Languages, 1st ed. Copied from original manuscript loaned by Captain Corliss.

Clark (W. C.). Vocabulary of the Modoc of Southern Oregon.

12 pp. 4°. In Introduction to the Study of Indian Languages, 1st ed. Collected in 1878 at Yáneks.

Craig (R. O.). Vocabulary of the Skagit and Snohomish.

4 ll. 4°. Collected in 1858.

Cremony (John C.). Vocabulary of the Mescalero Apaches.

6 ll. folio. Obtained by Captain Cremony at Fort Sumner, Bosque Redondo, on the Pecos River, N. Mex., in 1863.

Crook (*Gen.* George). Vocabulary of the Hoopah of the Lower Trinity River, California; 180 words.

2 ll. 4°.

——— Vocabulary of the Tahluwah; 180 words.

3 ll. folio.

Denig (E. T.). Vocabulary of the Blackfoot, by E. T. Denig, Indian agent, Fort Union.

6 pp. folio.

Diezman (F. J.). Grammar of the Mosquito Indian Language, prepared by F. J. Diezman, of San Juan del Norte, Nicaragua.

16 ll. 4°. Prepared in 1865.

Dorsey (James Owen). Myths, Stories, and Letters in the Ψegiha Language.

750 pp. folio. This material is in hands of the printer, and will form Part I, Vol. 6, Contributions to North American Ethnology. It comprises 70 stories and myths and 300 letters, each with interlinear translation, explanatory notes, and free translation.

——— Grammar of the Ψegiha Language.

800 pp. folio. Will form Part 2 of Vol. 6, Contributions to North American Ethnology.

——— Ψegiha Dictionary—Ψegiha-English and English-Ψegiha, alphabetically arranged; contains 20,000 words.

22,000 slips. Will form Part 3 of Vol. 6, Contributions to North American Ethnology.

——— Linguistic Material of the Iowas, Otos, and Missouris.

1,000 pp. folio. Consists of myths, stories, and letters, with interlinear translation, a dictionary of 9,000 words, and a grammar.

Dorsey (James Owen). Linguistic Material of the Winnebago Language.

75 pp. folio and 2,100 slips. Consists of a letter, grammatic notes, and dictionary of 2,000 words.

——— Kansas and Omaha Words and Phrases.

5 pp. folio.

Eels (*Rev.* Myron). Words, Phrases, and Sentences in Chemakum.

37 ll. 4°. In Introduction to the Study of Indian Languages, 1st ed. Collected at the Skokomish Reservation, Washington Territory, 1878.

——— Words, Phrases, and Sentences in the S'klallam or Sclallam.

52 ll. 4°. In Introduction to the Study of Indian Languages, 1st ed., complete. Collected at the Skokomish Reservation in 1878. Includes plural forms and possessive cases of nouns and pronouns and the partial conjugation of the verb "to eat".

——— Words, Phrases, and Sentences in the Skwâksin Dialect of the Niskwalli Language.

52 ll. 4°. In Introduction to the Study of Indian Languages, 1st ed., complete. Collected in 1878. Includes plural forms, possessive cases and diminutives of nouns, comparison of adjectives, cases of pronouns, and partial conjugation of the verbs "to eat" and "to drink".

——— Words, Phrases, and Sentences in the Twana Language.

52 ll. 4°. In Introduction to the Study of Indian Languages, 1st ed., complete. Collected in 1878. Includes plural forms, possessive cases and gender of nouns, comparison of adjectives, possessive case of pronouns, and partial conjugation of the verbs "to eat" and "to drink".

Eskimo. Vocabularies (60 words each) of the Asiagmut, of Norton Bay; Kuskokvims, of Norton Bay; of the Indians near Mount St. Elias; of Kadiak Island; and of the Indians of Bristol Bay.

5 ll. folio.

Euphrasia (*Sister* M.). Exercises in the Papago Language, by Sister M. Euphrasia, St. Xavier's Convent, Arizona.

6 ll. folio. Twenty-seven exercises, and phrases and sentences.

Everett (William E.). Vocabulary of the Sioux, alphabetically arranged; by Will. E. Everett, Government Scout.

91 pp. folio.

Flachenecker (*Rev.* George). Notes on the Shyenne Language, by Rev. Geo. Flachenecker, Lutheran Missionary, Deer Creek, Nebraska, September, 1862.

7 pp. folio.

Fletcher (Robert H.). Vocabulary of the Nez Percés.

10 ll. folio. On Smithsonian form. Collected in 1873 in Idaho.

Fuertes (E. A.). Vocabularies of the Chimalapa, or Zoque; Guichicovian, or Mixe; Zapoteco; and Maya; 200 words each.

17 ll. 4°. In parallel columns, accompanied by grammatic notes.

Gabb (*Dr.* William M.). Vocabularies of the Cochimi and Kiliwee; 211 words each.

10 ll. 4°. On Smithsonian form. Collected April, 1867. The Cochimi vocabulary collected in the center of the peninsula of Lower California, in the vicinity of San Borja and Santa Gertrude; the Kiliwee 150 miles farther north.

——— Vocabulary of the Klamath of Southern Oregon; 150 words.

10 ll. 4°. On Smithsonian form. Collected in 1864.

Gabb (*Dr.* William M.). Vocabulary of the Yuma; 186 words.

6 ll. folio. Collected in the vicinity of Fort Yuma.

——— Vocabulary of the Yuma and H'tääm.

10 ll. 4°. On Smithsonian form. Collected in 1867.

Galbraith (F. G.). Vocabulary of the Indians of the Pueblo of Santa Clara, New Mexico.

14 ll. folio. Collected in 1880.

Gardiner (*Bishop* —.). Some forms of the Chipewyan verb.

5 ll. folio.

Gardiner (W. H.). Vocabulary of the Sisseton Dakotas, by W. H. Gardiner, Assistant Surgeon, U. S. A.

10 ll. 4°. On Smithsonian form. Collected in 1868.

Gatschet (Albert Samuel). Vocabulary of the Achomâwi, Pit River, Northeast California.

11 pp. folio. Includes dialects of Big Valley, Hot Springs, and Goose Lake.

——— Vocabulary of the Ara (Karok), Klamath River, California, from Red Caps to Clear Creek, near mouth of Scott River; 211 words.

6 ll. folio. On Smithsonian form.

——— Cheroki Linguistic Material obtained from Richard M. Wolfe, Delegate of the Cherokee Nation to the United States Government.

5 ll. folio. Principally phrases and sentences.

——— Words, Phrases, and Sentences in Clackama.

In Introduction to Study of Indian Languages, 1st ed. The Clackamas belong to the Chinuk family. Material collected at Grande Ronde Reservation, Yamhill County, Oregon, December, 1877.

——— Creek or Maskoki Linguistic Material obtained from General Pleasant Porter and Mr. R Hodge, Delegates of the Creek Nation to the United States Government, 1879–'80.

4 ll. folio. Principally phrases and sentences.

——— Káyowē Linguistic Material.

10 pp. folio. Composed principally of sentences with translation. Collected February and March, 1880, from Itáli Du^{n}moi, or "Hunting Boy", a young pupil of the Hampton, Va., school, employed at the Smithsonian Institution, and afterwards sent to the Indian School at Carlisle, Pa.

——— Linguistic Material of the Kalapuya family, Atfálati dialect.

Pp. 1–399. sm. 4°, in five blank books. Consists of texts with interlinear translation, grammatic notes, words, phrases, and sentences.

——— List of Suffixes of the Tualati or Atfálati Dialect of the Kalapuya of Oregon.

Blank book, sm. 4°. Arranged in 1878.

——— Words, Phrases, and Sentences of the Atfálati or Wápatu Lake Language.

In Introduction to the Study of Indian Languages, 1st ed.—nearly complete. Collected at Grande Ronde Agency, 1877.

——— Vocabulary of the Lúkamiute and Ahántchuyuk Dialects of the Kalapuya Family.

16 pp. 4°. In Introduction to the Study of Indian Languages, 1st ed., incomplete. Collected at Grande Ronde Indian Agency, 1877.

Gatschet (Albert Samuel). Words, Phrases, and Sentences of the Yamhill Dialect of the Kalapuya Family.

9 pp. 4°. In Introduction to the Study of Indian Languages, 1st ed., incomplete. Collected at the Grande Ronde Agency, 1877.

——— Vocabulary of the Kansas or Kaw.

12 pp. 4°. In Introduction to the Study of Indian Languages, 1st ed., incomplete.

——— Linguistic Material collected at the Chico Rancheria of the Michopdo Indians (Maidu family), Sacramento Valley, California.

84 pp. sm. 4°, blank book. Text with interlinear translation, phrases, and sentences. Collected in 1877.

——— Words, Phrases, and Sentences in the Mólale Language.

30 ll. 4°. In Introduction to the Study of Indian Languages, 1st ed. Collected at the Grande Ronde Agency, Oregon, in 1877.

——— Texts in the Mólale Language with Interlinear Translation.

12 ll. folio. Consists of a short description of marriage ceremonies, the "Myth of the Coyote", and a "Raid of the Cayuse Indians". Collected at the Grande Ronde Reserve in 1877, from Stephen Savage.

——— Vocabulary of the Mohawk.

7 ll. folio. Collected from Charles Carpenter, an Iroquois of Brantford, in 1876.

——— Vocabulary of the Nönstöki or Nestuccas Dialect of the Selish family.

10 ll. 4°. Collected in 1877 from an Indian called "Jack", of Salmon River, Oregonian Coast. On Smithsonian form.

——— Sasti-English and English-Sasti Dictionary.

84 ll. sm. 4°. Alphabetically arranged from materials collected at Dayton, Polk County, Oregon, in November, 1877. The informants were two young men, the brothers Leonard and Willie Smith, pure blood Shasti (or Sásti) Indians, who had come from the Grand Ronde Indian Agency, a distance of 25 miles. Their old home is the Shasti Valley, near Yreka, Cal.

——— Shasti-English and English-Shasti Dictionary.

69 ll. sm. 4°. Obtained from "White Cynthia", a Klamath woman living at Klamath Lake Reservation, Williamson River, Lake County, Oregon, in September, 1877. Dialect spoken at Crescent City, Cal.

——— Vocabulary of the Sáwäno or Shawnee.

7 pp. folio. Collected in 1879 from Bluejacket. Includes clans of the Shawnees with their totems.

——— Sháwano Linguistic Material.

24 pp. folio. Texts with interlinear translation, grammatic forms, phrases, and sentences. Collected February and March, 1880, from Charles Bluejacket, delegate of Shawano tribe to the United States Government.

——— Tonkawa-English and English-Tonkawa Dictionary.

52 pp. sm. 4°.

——— Words, Phrases, and Sentences in the Umpkwa Language.

22 ll. 4°. In Introduction to Study of Indian Languages, 1st ed. Collected at Grande Ronde Agency, 1877.

——— Vocabulary of the Warm Spring Indians, Des Chutes, Oreg.; 200 words.

10 ll. 4°. On Smithsonian form. Collected in 1875.

Gatschet (Albert Samuel). Vocabulary of the Wasco and Waccanéssisi Dialects of the Chinuk Family.
7 pp. folio. Taken at the Klamath Lake Agency, Oregon, 1877.

——— Vocabulary of the Zuñian Language, with grammatic remarks.
10 ll. folio. Obtained from a Zuñi boy about 10 years old, who was attending the Indian school at Carlisle, Pa., in 1880.

Geisdorff (*Dr.* Francis). Vocabulary of the Mountain Crows.
10 ll. 4°. On Smithsonian form.

Gibbs (George). Account of Indian Tribes upon the Northwest Coast of America.
10 ll. folio.

——— Comparisons of the Languages of the Indians of the Northwest.
23 ll. 8° and folio.

——— Miscellaneous Notes on the Eskimo, Kenai, and Atna Languages.
25 ll. 4° in folio.

——— Notes on the Language of the Selish Tribes.
10 ll. folio.

——— Notes to the Vocabularies of the Klamath Languages.
7 ll. folio.

——— Indian Nomenclature of Localities, Washington and Oregon Territories.
7 ll. folio.

——— Observations on the Indians of the Klamath River and Humboldt Bay, accompanying Vocabularies of their Languages.
25 ll. folio.

——— Principles of Algonquin Grammar.
5 pp. 4°.

——— Vocabulary of the Chemakum and Mooksahk; 180 words.
3 ll. folio.

——— Vocabulary of the Chikasaw; 200 words.
10 ll. 4°. On Smithsonian form. Collected in 1866.

——— Vocabulary of the Clallam; 180 words.
3 ll. folio.

——— Vocabulary of the Cowlitz; 200 words.
10 ll. 4°.

——— Vocabulary of the Creek; 200 words.
10 ll. folio. On Smithsonian form. Collected in 1866.

——— Vocabulary of the Eskimo of Davis Strait; 211 words.
6 ll. folio. On Smithsonian form.

——— Vocabulary of the Hitchittie, or Mikasuki; 200 words.
10 ll. 4°. On Smithsonian form. Collected in 1866.

——— Vocabulary of the Hoopah; 180 words.
4 ll. folio. Collected at the mouth of the Trinity River, in 1852.

——— Vocabulary of the Indians of the Pueblo of Ysletta.
10 ll. 4°. On Smithsonian form. Collected in 1868.

——— Vocabulary of the Klikatat; 150 words.
6 ll. folio. Obtained from Yahtowet, a subchief, in 1854.

——— Vocabulary of the Kwantlen of Fraser's River; 180 words.
5 ll. folio. Collected in 1858.

Gibbs (George). Vocabulary of the Makah; 200 words.
4 ll. 4°.

——— Vocabulary of the Makah; 180 words.
6 ll. folio. On Smithsonian form.

——— Vocabulary of the Molele, Santiam Band.
3 ll. folio.

——— Vocabulary of the Toanhootch of Port Gambol; 180 words.
3 ll. folio.

——— Vocabulary of the Willopah Dialect of the Tahcully, Athapasca; 100 words.
6 ll. folio.

——— Observations on the Indians of the Colorado River, California, accompanying Vocabularies of the Yuma and Mohave Tribes.
7 pp. folio.

——— Vocabulary of the Mohave; 180 words.
6 ll. folio. Obtained from a chief, Iritaba, in New York, 1863.

——— Vocabulary of the Sawanwan; 211 words.
10 ll. 4°. On Smithsonian form.

——— Vocabulary of the Yamhill Dialect of the Kalapuya; 211 words.
6 ll. folio. On Smithsonian form.

Grossman (*Capt.* F. E.). Some Words of the Languages of the Pimo and Papago Indians of Arizona Territory.
80 pp. 4°. English-Pimo and Pimo-English, alphabetically arranged. Accompanied by a few grammatic notes and three stories with interlinear English translation. Collected at the Gila River Reservation during 1871.

Gilbert (Grove Karl). Vocabulary of the Wallapai; 411 words.
23 ll. 4°. In Introduction to the Study of Indian Languages, 1st ed. Collected in 1878.

Hale (Horatio). Vocabulary of the Tutelo, with remarks on the same.
30 pp. 4°.

Hamilton (A. S.). Vocabulary of the Haynarger Dialect of the Tahcully, Athapasca; 180 words.
5 ll. folio.

Hamilton (S. M.). Chippewa Vocabulary; 180 words.
20 pp. folio.

Hamilton (*Rev.* William). Vocabulary of the Iowa and Omaha; 112 words.
12 ll. oblong folio.

——— Vocabulary of the Omaha, alphabetically arranged.
33 ll. 4°.

Hazen (*Gen.* W. B.). Vocabulary of the Takilma; 211 words.
6 ll. folio. On Smithsonian form.

——— Vocabularies of the Upper Rogue River Languages—Applegate (Umpkwa), Takilma, and Shasta; 180 words each.
3 ll. folio.

Heintzelman (*Gen.* —.). Vocabulary of the Cocopa; 100 words.
6 ll. folio. Copy of a MS. furnished Hon. John P. Bartlett by General Heintzelman.

——— Vocabulary of the Hum-mock-a-ha-vi; 180 words.
6 ll. folio. Copy of a MS. furnished Hon. John P. Bartlett by General Heintzelman.

Helmsing (J. S.). Vocabulary of the M'mat of Southwest Arizona and Southeast California; 211 words.
10 ll. 4°. On Smithsonian form.

Henderson (Alexander). Grammar and Dictionary of the Karif Language of Honduras (from Belize to Little Rock). Belize, 1872.
Pp. 1–340. 12° in eight blank books.

Higgins (N. S.). Notes on the Apaches of Arizona.
30 pp. folio. Includes a vocabulary of 200 words, names of tribes, etc.

Husband (Bruce). Vocabulary of the Sioux.
6ll. folio. On Smithsonian form. Collected at Fort Laramie, 1849.

Jones (J. B.). Vocabulary of the Cherokee; mountain dialect; 200 words.
10 ll. 4°. On Smithsonian form. Collected in 1866.

Jordan (*Capt.* Thomas). Vocabulary of the Cayuse; 180 words.
3 ll. folio.

Kantz (August V.). Vocabulary of the Indians of the Pueblo of Isleta, N. Mex.
10 ll. 4°. On Smithsonian form. Collected in 1869.

——— Vocabulary of the Too-too-ten; 180 words.
6 ll. folio.

Kirk (Charles W.). Hymns in the Wyandot Language.
24 ll. 4°.

Kenicott (Robert). Vocabulary of the Chipewyan of Slave Lake.
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——— Vocabulary of the Hare Indians, of Fort Good Hope, Mackenzie River.
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——— Vocabulary of the Nahawny Indians of the Mountains west of Fort Liard.
6 ll. folio.

——— Vocabulary of the Tsuhtyuh (Beaver People)—Beaver Indians of Peace River west of Lake Athabasca; and of the Thekenneh (People of the Rocks) Siccanies of the Mountains, south of Fort Liard.
6 ll. folio.

Kent (—.). List of names of Iowa Indians, with English translation.
8 pp. folio. Accompanied by a similar list revised by Rev. William Hamilton. 7 pp. folio.

Keres. Vocabulary of the Keres; 175 words.
6 ll. folio. On Smithsonian form. Collector unknown.

Knipe (C.). Nootka or Tahkahh Vocabulary; 250 words.
7 ll. folio. On Smithsonian form.

Leyendecher (John Z.). *See* **Butcher** (*Dr.* H. B.) *and* **Leyendecher** (John Z.).

MacGowan (*Dr.* D. J.). Vocabulary of the Caddo, with Linguistic notes.
8 pp. folio.

——— Vocabulary of the Comanches; 200 words.
6 ll. 4°. On Smithsonian form. Collected in 1865.

McBeth (S. L.). Vocabulary of the Nez Percé; 211 words.
7 ll. folio.

McBeth (S. L.). Grammar of the Nez Percé Language.
66 ll. folio.

McDonald (Angus). Vocabulary of the Kootenay; 200 words.
6 ll. folio. On Smithsonian form.

McElroy (Patrick D.). Vocabulary of the Jicarilla Apache; 275 words.
15 ll. 4°. Compiled at Cimarron, Colfax County, N. Mex., in 1875.

Mahan (I. L.). Words, Phrases, and Sentences in Odjibwe.
Pp. 8-102. 4°. In Introduction to the Study of Indian Languages, 1st ed.—nearly complete. Collected at Bayfield, Wis., in 1879. Mr. Mahan is the Indian agent at Red Cliff Reserve, Wis.

Meulen (*Lieut.* E. de). Vocabulary of the Kenay of Cook's Inlet.
10 ll. 4°. On Smithsonian form. Collected in 1870.

Milhau (*Dr.* John J.). Vocabulary of the Anasitch (Coos Bay, No. 1); 211 words.
6 ll. folio. On Smithsonian form.

——— Vocabulary of Coos Bay, No. 2; 211 words.
6 ll. folio. On Smithsonian form.

——— Vocabulary of the Coast Indians living on the streams emptying between Umpqua Head and Cape Perpetua, Oregon, and on the Umpqua River for twenty miles above the mouth.
3 ll. folio.

——— Vocabulary of the Hewut, Upper Umpqua, Umpqua Valley, Oregon. 180 words.
6 ll. folio.

——— Vocabulary of the Umpqua, Umpqua Valley, Oregon; 180 words.
3 ll. folio.

——— Vocabulary of the Yakona; 180 words.
3 ll. folio. Language of the Coast Indians lying between Cape Perpetua and Cape Foulweather, and up the Alseya and Yakona Rivers.

Mowry (*Lieut.* Sylvester). Vocabulary of the Diegano; 175 words.
6 ll. folio. Taken from the interpreter at Fort Yuma—an intelligent Diegano who spoke Spanish fluently.

——— Vocabulary of the Mohave; 180 words.
6 ll. folio. Collected from Miss Olive Oatman, who was for years a prisoner among these Indians.

Muskoki. Hymn: What a Friend we have in Jesus.
1 sheet folio. Translator unknown.

——— Vocabularies of the Creek and Cherokee; 211 words in parallel columns.
10 ll. folio. On Smithsonian form. Collected in 1867. Collector unknown.

Nichols (A. Sidney). Vocabulary of the Navajo.
10 ll. folio. Collected in 1868.

Noosoluph. Vocabularies of the Noosoluph, or Upper Chihalis, and Kwinaiutl.
11 pp. 4°. Collector unknown.

Ober (Frederick A.). Vocabulary of the Carib; Islands of Dominica and St. Vincent; 211 words.
10 ll. folio. On Smithsonian form.

Packard (Robert L.). Terms of relationship used by the Navajo Indians.
4 ll. folio. Collected at the Navajo Reservation, New Mexico, in 1881.

Palmer (*Dr.* Edward). Vocabulary of the Indians of the Pueblo of Taowa; 40 words.

2 ll. folio.

——— Vocabulary of the Pinaleño and Arivaipa Apache; 200 words.

3 ll. 4°.

Parry (*Dr.*). Vocabulary of the Pima Indians; 150 words.

6 ll. folio. On Smithsonian form. Forwarded by Maj. W. H. Emory, 1852.

Páni. Vocabulary of the Hueco or Waco; 50 words.

6 ll. folio. On Smithsonian form. Collector unknown.

——— Vocabulary of the Kichai; 30 words.

6 ll. folio. On Smithsonian form. Collector unknown.

Pike (*Gen.* Albert). Verbal forms in the Muscoki Language.

20 ll. folio. Seven verbs run through various tenses and modes.

——— Verbal forms of the Muscoki and Hichitathli.

27 ll. folio.

——— Vocabularies of the Creek or Muscogee, Uchee, Hitchita, Natchez, Co-os-au-da or Co-as-sat-te, Alabama, and Shawnee.

56 ll. folio. These vocabularies are arranged in parallel columns for comparative purposes, and contain from 1,500 to 1,700 words each. The manuscript was submitted to Mr. J. H. Trumbull, of Hartford, Conn., for examination, and was by him copied on slips, each containing one English word and its equivalent in the dialects given above, spaces being reserved for other dialects. They were then sent to Mrs. A. E. W. Robertson, of Tullahassee, Ind. T., who inserted the Chickasaw. These cards are also in the possession of the Bureau of Ethnology.

——— Vocabulary of the Osage; 200 words.

11 ll. folio.

——— Vocabulary of the Toncawe; 175 words.

10 ll. 4°.

Pilling (James C.). Words and Phrases in the Wundát or Wyandot Language.

36 ll. folio. In Introduction to Study of Indian Languages, 1st ed., incomplete. Collected from John Grayeyes, a Wyandot Chief, 1880.

Pope (*Maj.* F. L.). Vocabulary of Words from the Siccany Language.

14 pp. 4°. "The tribe known as the Sicannies inhabit the tract of country lying to the northwest of Lake Tatla, in British Columbia, and their language is nearly the same as that spoken by the Connenaghs, or Nahonies, of the Upper Stikine."

Poston (Charles D.). Vocabulary of the Pima Indians of Arizona; 180 words.

10 ll. 4°. On Smithsonian form.

Powell (John Wesley). Conjugation of Ute Verbs.

438 ll. 4°.

——— Miscellaneous Linguistic Notes on the Utes and Pai-Utes of Colorado and Utah.

120 ll. 4°.

——— Notes on the Shinumo Language.

44 pp. 4°. Collected at Oraibi, N. Mex., in 1870.

——— Notes on the Songs, Mythology, and Language of the Pai-Utes, 1871–72.

194 pp. folio.

Powell (John Wesley). Ute Vocabulary.

11 ll. 4°. Contains also a brief list of duals and plurals of nouns, adjectives, pronouns, and verbs.

——— Vocabulary of the Gosi-Ute.

71 ll. 4°. Collected from an Indian named Seguits, from Skull Valley, Nev., 1873.

——— Vocabulary of the Hu-muk-a-há-va (Mojaves); 55 words.

4 ll. 4°. Collected in Las Vegas Valley, Nev., October, 1873.

——— Vocabulary of the Indians of Las Vegas, Nev.

93 ll. 4°. Contains conjugation of the verbs "to strike" and "to eat."

——— Vocabulary of the Navajo.

8 ll. folio. Collected in 1870 at Fort Defiance.

——— Vocabulary of the Noje.

10 ll. 4°. Collected in 1881.

——— Vocabulary of the Pavants of Utah.

17 ll. 4°. Obtained from Kanosh, a chief of the Pavants, in 1873.

——— Vocabulary of the Paviotso.

61 ll. 4°. Collected from Naches, Salt Lake City, Utah, 1873.

——— Vocabulary of the Paviotso.

77 ll. 4°. Collected in Humboldt Valley, Nevada, 1880.

——— Vocabulary of the Paviotso, Western Nevada.

25 pp. 4°. In Introduction to the Study of Indian Languages, 2d ed., incomplete. Collected in 1880.

——— Vocabulary of the Shoshoni of Nevada.

9 ll. 4°.

——— Vocabulary of the Shoshoni of Western Nevada.

37 ll. 4° and folio. Collected in 1880.

——— Vocabulary of the Tabuat Utes, Grand River, Colorado.

10 ll. 4°. On Smithsonian form. Collected in 1868.

——— Vocabulary of the Tantawaits (Shimawiva).

18 ll. 4°. Obtained from an Indian at Las Vegas, Nev., 1873.

——— Vocabulary of the Tosauwihi—Shoshoni of Eastern Nevada.

56 ll. 4°. Collected from an Indian called Captain Johnson, in 1873.

——— Vocabulary of the Uchi; 50 words.

2 ll. folio.

——— Vocabulary of the Ute Indians of Utah.

16 ll. 4°. Obtained of an Indian named Pompuwar, in 1873.

——— Vocabulary of the Utes of Weber River, Utah.

23 pp. 8° and 4°. Collected in 1877.

——— Vocabulary of the Utes of the White and Uinta Rivers, Utah.

62 ll. 4°.

——— Vocabulary of the Wintu'n.

40 ll. 4°. Collected in 1880.

——— Words, Phrases, and Sentences in the Kaivavwit Dialect of the Shoshoni Language.

103 ll. 4°. Obtained from a band of Indians living on Kaibab Creek, Southern Utah.

——— Words, Phrases, and Sentences of the Ute Indians of Utah Territory.

487 ll. 4°.

Powell (J. W.). Vocabulary of the Kootenay; 185 words.
2 ll. folio. Mr. Powell is Superintendent of Indian Affairs, Canada

Powers (Stephen). Vocabulary of the Modoc; 31 words.
1 sheet folio.

——— Vocabulary of the Tolowa; 10 words.
1 l. folio.

——— Vocabularies of the Wailakki and Hupâ Languages; 211 words each.
6 ll. folio. On Smithsonian form.

——— Vocabulary of the Washo; 211 words.
10 ll. 4°. On Smithsonian form. Collected at Carson City, Nev., 1876.

Preston (*Capt.* William). Vocabulary of the Delewes.
1 p. folio. This and the three following vocabularies were taken in 1796 by Capt. William Preston, Fourth United States Regulars, and found in a memorandum book originally belonging to him, but now in the possession of his grandson, Prof. William P. Johnson, of the Washington and Lee University.

——— Vocabulary of the Potawatomy; 50 words.
1 p. folio.

——— Words and Sentences in Miami.
6 pp. folio.

——— Words, Phrases, and Sentences in Shawannee.
7 pp. folio.

Renshawe (John Henry). Vocabulary of the Hualapi.
21 ll. 4°. In Introduction to the Study of Indian Languages, 1st ed. Collected in 1878 on the Colorado Plateau, Arizona.

Ridgway (Robert). Vocabulary of the Washo; 75 words.
5 ll. folio. Collected at Carson City, Nev.

Riggs (*Rev.* Alfred Longley). Language of the Dakotas and cognate tribes; by Alfred L. Riggs, A. B., B. D., Missionary of the American Board.
24 ll. 8°.

Riggs (*Rev.* Stephen Return). Comparative Vocabulary of the Dakota, Winnebago, Omaha, and Ponka.
9 ll. folio. Includes a few grammatic forms.

——— Dictionary of the Santee Dakota—Dakota-English and English-Dakota.
820 pp. folio. This material is in the hands of the printer, and will form Part 2 of Vol. 7, Contributions to North American Ethnology. Part 1 will consist of myths and stories with interlinear translation, and a Grammar of this dialect. It is in an advanced stage of preparation.

Robertson (*Mrs.* Ann Eliza Worcester). Vocabulary of the Chickasaw.
On slips. *See* **Pike** (*Gen.* Albert).

Roehrig (F. L. O.) Comparative Vocabulary of the Selish Languages.
50 pp. folio. Includes words in Selish proper, or Flathead; Kalispelm; Spokan; Skoyelpi; Okinaken; S'chitsui; Shiwapmuth; Piskwaus.

——— Comparative Vocabulary of the Selish Languages, second series.
42 ll. 4°. Includes words of the following dialects: Clallam, Lummi, Nooksahk, Nanaimook, Kwantlen, and Tait.

Ross (R. B.). Vocabulary of a Dialect of the Tinnean Language.
6 ll. folio.

Ross (R. B.). Vocabulary of the Chipewyan.
6 ll. folio.

——— Vocabulary of the Natsit Kutchin (Strong Men).
6 ll. folio. Procured from an Indian who had been several years in the Hudson Bay Company's service.

——— Vocabulary of the Nehaunay of Nehaunay River.
6 ll. folio. Collected from a member of one of the tribes residing in the mountainous country between the Liard and Mackenzie Rivers.

——— Vocabulary of the Kutcha Kutchin, Yukon River.
6 ll. folio. Procured from Mr. Hardesty, who had resided among these Indians for about ten years.

——— Vocabulary of the Sikani.
6 ll. folio.

Semple (J. E.). Vocabulary of the Clatsop Language; 35 words.
1 l. 4°. Collected in 1870, near Fort Stevens, Oregon.

Sherwood (*Lieut.* W. L.). Vocabulary of the Sierra Blanco and Coyotero Apaches, with notes.
7 ll. folio.

Shortess (Robert). Vocabulary of the Chinook.
5 pp. folio.

Smart (*Capt.* Charles). Vocabulary of the Coyotero Apaches, with notes.
8 ll. folio. Collected in 1866 at Fort McDowell, Arizona.

Smith (E. Everett). Vocabulary of the Malemute, Kotzebue Sound; 190 words.
10 pp. 4°. On Smithsonian form.

Stubbs (A. W.). Vocabulary of the Kansas or Kaw.
In Introduction to the Study of Indian Languages, 1st ed.—not complete.

Sutter (Emil V.). Maidu Vocabulary; 60 words.
2 ll. folio. Collected from the Indians of Feather and Yuba Rivers.

Swan (James G.). A Criticism on the Linguistic Portion of Vol. I, Contributions to North American Ethnology.
4 ll. folio.

——— A Vocabulary of the Language of the Haida Indians of Prince of Wales Archipelago.
19 pp. 8°.

——— Vocabulary of the Makah.
21 ll. folio. Alphabetically arranged.

——— Vocabulary of the Makah.
10 ll. 4°. On Smithsonian form.

Tassin (*Lieut.* A. G.). Vocabulary of the Arrapaho; 60 words.
1 l. folio.

Thomas (*Gen.* George H.). Vocabulary of the Navajo and Yuma Languages.
8 ll. 4°. 35 Navajo words; 100 of the Yuma.

Thompson (Almond Harris). Vocabulary of the Navajo.
5 ll. 12° and 8 ll. 4°.

Tinnéan. Vocabulary of the Hong Kutchin.
4 ll. folio. Collector unknown.

Tolmie (*Dr.* William F.). Vocabulary of the Cootonais or Cuttoonasha; 75 words.
1 l. folio.

Tolmie (*Dr.* William F.). Vocabulary of the Kootnay; 165 words.
3 ll. folio. On Smithsonian form.

——— Vocabulary of the Tahko Tinneh; 60 words.
1 l. folio.

Vetromile (*Rev.* Eugene). A Dictionary of the Abnaki Language—English-Abnaki and Abnaki-English.
3 vols. folio. Material collected by Father Vetromile while missionary among the Abnakis during the years 1855 to 1873. Volume 1, pp. 1–573 contains prefatory remarks, description of the alphabet used, synopsis of the Abnaki language, including brief grammatic remarks, a table of abbreviations, and the Abnaki-English dictionary from A to H, inclusive. Volume 2, pp. 3–595, contains further remarks on the grammar, and a continuation of the Abnaki-English dictionary, I to Z, inclusive. The dictionary in each of these volumes is divided into four columns; the first containing words from the Abnaki dictionary of the Rev. Father Rasles; the second, words in the Penobscot; the third, Mareschit; and the fourth, Micmac. Volume 3, pp., 1–791, contains the Abnaki-English dictionary, A to Z, and includes words in the Penobscot, Etchimin, Mareschit, Micmac, Montagnie, and Passamaquoddy dialects.

Wabass (—.). Vocabularies of the Chinook and Cowlitz Languages.
1 l. folio. Collected in 1858.

White (Ammi M.). Vocabulary of the Pima and Papago Indians; 200 words.
10 ll. 4°. On Smithsonian form. Collected at the Pima and Maricopa Agency, Arizona, 1864.

White (*Dr.* John B.). Classified List of the Prepositions, Pronouns, &c., of the Apache Language.
2 ll. 4°.

——— Degrees of Relationship in the Language of the Apache.
2 ll. 4°.

——— Names of the different Indian Tribes in Arizona, and the Names by which they are called by the Apaches.
5 ll. 4°.

——— Remarks on the General Relations of the Apache Language.
7 ll. 4°.

——— Sentences in Apache, with a classification of men, women, and children with the Apache names.
15 pp. 12°. Collected in 1873 at the Apache Reservation in Arizona.

——— Vocabulary of the Apache and Tonto Languages.
110 pp. 12°. Collected at San Carlos Reservation in 1873, '74, '75.

——— Sentences in the Tonto Language.
5 pp. 4°.

Willard (Celeste N.). Vocabulary of the Navajo.
10 ll. folio. Collected in 1869.

Williamson (*Rev.* Thomas S.). Comparative Vocabulary of the Winnebago, Omaha, Ponka, and Dakota, with remarks on the same.
38 pp. 4°.

Wowodsky (*Gov.* —.). Vocabulary of the Keni of Cook's Inlet Bay.
2 ll. folio.

Wright (*Rev.* Allen). Vocabulary of the Chahta or Choctaw; 211 words.
10 ll. folio. On Smithsonian form. Collected in 1866.

SMITHSONIAN INSTITUTION——BUREAU OF ETHNOLOGY.

J. W. POWELL, DIRECTOR.

ILLUSTRATION OF THE METHOD

OF

RECORDING INDIAN LANGUAGES.

FROM THE MANUSCRIPTS OF MESSRS. J. O. DORSEY, A. S. GATSCHET, AND S. R. RIGGS.

ILLUSTRATION OF THE METHOD OF RECORDING INDIAN LANGUAGES.

HOW THE RABBIT CAUGHT THE SUN IN A TRAP.

AN OMAHA MYTH, OBTAINED FROM F. LAFLÈCHE BY J. OWEN DORSEY.

Ēgiḉe macteiñ'ge aká iɣa$^{n'}$ ḉiñké ená-qtci qíǵe júgiǵḉá-biamá.
It came to pass rabbit the sub. his grand-mother the st. ob. only dwelt with his own, they say.

Kĭ ha$^{n'}$ega^{n}tcĕ'-qtci-hna$^{n'}$ 'ábae ahí-biamá. Ha^{n}ega^{n}tcĕ'-qtci aḉá-bi
And morning very habitually hunting went thither they say. morning very went, they say

ctĕwa$^{n'}$ níkaci^{n}ga wi$^{n'}$ sí snedĕ'-qti-hna^{n} síǵḉe aḉá-bitéamá. Kĭ íbaha^{n} 3
notwithstanding person one foot long very as a rule trail had gone, they say. And to know him

ga^{n}ḉá-biamá. Níaci^{n}ga ḉi$^{n'}$ I$^{n'}$ta^{n} wíta^{n}ḉi^{n} bḉé tá miñke, eḉégá^{n}-biamá.
wished they say. Person the mv. ob now I-first I go will I who, thought they say.

Ha$^{n'}$ega^{n}tcĕ'-qtci páha^{n}-bi ega$^{n'}$ aḉá-biamá. Cĭ ǵiḉe níkaci^{n}ga amá
Morning very arose they say having went they say. Again it happened person the mv. sub.

síǵḉe aḉá bitéamá. Ēgiḉe akí-biamá. Gá-biamá: ɣa^{n}há, wíta^{n}ḉi^{n} bḉé 6
trail had gone, they say. It came to pass he reached home, they say. Said as follows, they say: grandmother I—first I go

aɣídaxe ctĕwa$^{n'}$ níkaci^{n}ga wi$^{n'}$ a$^{n'}$aqai aḉaí te a$^{n'}$. ɣa^{n}há, uɣía^{n}ḉe
I make for myself in spite of it person one getting ahead of me he has gone. Grandmother snare

ḉáxe tá miñke, kĭ bḉíze tá miñke hă. Áta^{n} ja$^{n'}$ tada$^{n'}$, á-biamá
I make it will I who, it and I take him will I who . Why you do it should? said, they say

wa'ujiñga aká. Níaci^{n}ga iḉát'abḉé hă, á-biamá. Kĭ mactciñ'ge aḉá- 9
old woman the sub. Person I hate him . said, they say. And rabbit went

biamá. Aḉá-bi ɣĭ cĭ síǵḉe ḉétéamá. ɣĭ ha$^{n'}$ tĕ iḉápe ja$^{n'}$-biamá.
they say. Went they say when again trail had gone. And night the waiting for lay they say.

Man'dĕ-ɣa^{n} ḉa^{n} ukínacke gaxá-biamá, kĭ síǵḉe ḉé-hna^{n} tĕ ĕ'di iḉa$^{n'}$ḉa-
bow string the ob. noose he made it they say, and trail went habitually there he put it

biamá. Ēgiḉe ha$^{n'}$+ega^{n}-tcĕ'-qtci uɣía^{n}ḉe ḉa^{n} giɣa$^{n'}$be ahí-biamá. Ēgiḉe 12
they say. It came to pass. morning very snare the ob. to see his own arrived they say. It came to pass

mi$^{n'}$ ḉa^{n} ḉizé akáma. Ta$^{n'}$ḉi^{n}-qtci uḉá agḉá-biamá. ɣa^{n}há índáda^{n}
sun the cv. ob. taken he had, they say. Running very to tell went homeward, they say. Grandmother. what

éi^{n}te bḉize édega^{n} a$^{n'}$baaze-hna$^{n'}$ há, á-biamá. ɣa^{n}há, man'de-ɣa^{n} ḉa^{n}
it may be I took but me it scared habitually . said they say. Grandmother, bow string the ob.

agḉize ka^{n}bdédega^{n} a$^{n'}$baaze-hna$^{n'}$i hă, á-biamá. Máhi^{n} aḉi$^{n'}$-bi ega$^{n'}$ 15
I took my own I wished, but me it scared habitually . said they say. Knife had they say having

ĕ'di aɛ́á-biamá. Kĭ ecaⁿ'-qtci ahí-biamá. Pĭájĭ ckáxe. Eátaⁿ égaⁿ
there went, they say. And near very ar- rived they say. Bad you did. Why so

ckáxe ã. Ĕ'di gi-adaⁿ' iⁿ'ɛická-gá hã, á-biamá miⁿ' aká. Macteiñ'ge
you did ? Hither come and for me untie it , said, they say sun the sub. Rabbit

3 aká ĕ'di aɛ́á-bi ctĕwaⁿ' naⁿ'pa-bi egaⁿ' hébe íhe aɛ́é-hnaⁿ'-biamá. Kĭ
the sub. there went say they notwith- standing feared they say having partly passed by went habitu- ally they say. And

ɹuⁿĕ' aɛ́á-bi egaⁿ' mása-biamá manˈdĕ-ɹaⁿ ɛ́aⁿ'. Gañ'ki miⁿ' ɛ́aⁿ maⁿ'-
rushed a knife they say bow string the ob. And sun the cv. ob. on

ciáha áiáɛ́a-biamá. Kĭ macteiñ'ge aká ábáɹu hiⁿ' ɛ́aⁿ názi-biamá
high had gone, they say. And Rabbit the sub. space bet. the shoulders hair the ob. burnt yellow they say

6 ánakadá-bi egaⁿ'. (Macteiñ'ge amá akí-biamá.) Ĭtcitci+, ɹaⁿhá,
it was hot on it they say having. (Rabbit the mv. sub. reached home, they say.) Itcitci-!! grand- mother,

náɛ́iñgĕ-qti-maⁿ' hã, á-biamá. ɹúcpaɛ́aⁿ+, iⁿ'naɛ́iñgĕ'-qti-maⁿ' eskaⁿ'+,
burnt to nothing very I am . said, they say. Grandchild!! burnt to nothing for me very I am I think,

á-biamá. Cetaⁿ'.
said, they say. So far.

NOTES.

581. 1. Macteiñge, the Rabbit, or Siɛe-makaⁿ (meaning uncertain), is the hero of numerous myths of several tribes. He is the deliverer of mankind from different tyrants. One of his opponents is Ictinike, the maker of this world, according to the Iowas. The Rabbit's grandmother is Mother Earth, who calls mankind her children.

581, 7. aɛ́ai te aⁿ. The conclusion of this sentence seems odd to the collector, but its translation given with this myth is that furnished by the Indian informant.

581, 12. haⁿ+egaⁿtcĕ qtci, "ve - - ry early in the morning." The prolongation of the first syllable adds to the force of the adverb "qtci," *very.*

582, 3. hebe ihe aɛ́e-hnaⁿ-biama. The Rabbit tried to obey the Sun; but each time that he attempted it, he was so much afraid of him that he passed by a little to one side. He could not go directly to him.

582, 4. 5. maⁿciaha aiaɛ́a-biama. When the Rabbit rushed forward with bowed head, and cut the bow-string, the Sun's departure was so rapid that "he had *already* gone on high."

ABBREVIATIONS USED IN THIS MYTH.

cv.	curvilinear.	sub.	subject.
mv.	moving.	ob.	object.
st.	sitting.		

TRANSLATION.

Once upon a time the Rabbit dwelt in a lodge with no one but his grandmother. And it was his custom to go hunting very early in the morning. No matter how early in the morning he went, a person with

very long feet had been along, leaving a trail. And he (the Rabbit), wished to know him. "Now," thought he, "I will go in advance of the person." Having arisen very early in the morning, he departed. Again it happened that the person had been along, leaving a trail. Then he (the Rabbit) went home. Said he, "Grandmother, though I arrange for myself to go first, a person anticipates me (every time). Grandmother, I will make a snare and catch him." "Why should you do it?" said she. "I hate the person," he said. And the Rabbit departed. When he went, the foot-prints had been along again. And he lay waiting for night (to come). And he made a noose of a bow-string, putting it in the place where the foot-prints used to be seen. And he reached there very early in the morning for the purpose of looking at his trap. And it happened that he had caught the Sun. Running very fast, he went homeward to tell it. "Grandmother, I have caught something or other, but it scares me. Grandmother, I wished to take my bow-string, but I was scared every time," said he. He went thither with a knife. And he got very near it. "You have done wrong; why have you done so? Come hither and untie me," said the Sun. The Rabbit, although he went thither, was afraid, and kept on passing partly by him (or, continued going by a little to one side). And making a rush, with his head bent down (and his arm stretched out), he cut the bow-string with the knife. And the Sun had already gone on high. And the Rabbit had the hair between his shoulders scorched yellow, it having been hot upon him (as he stooped to cut the bow-string). (And the Rabbit arrived at home.) "Itcitci+!! O grandmother, the heat has left nothing of me," said he. She said, "Oh! my grandchild! I think that the heat has left nothing of him for me." (From that time the rabbit has had a singed spot on his back, between the shoulders.)

DETAILS OF A CONJURER'S PRACTICE.

In the Klamath Lake Dialect. Obtained from Minnie Froben, by A. S. Gatschet.

Mák̲laks shuákiuk kíuksash k̲á-i gû'l'hi húnkĕlam ládshashtat, ndéna
Indians in calling the conjurer not enter his into lodge, they halloo

sha'hmóknok; kíuksh toks wán kiukáyank mû'luash m'na kaníta pî'sh.
to call (him) out; the conjurer red fox hanging out on a pole as sign his outside "of him."

Kukíaks tchû'tanish gátp'nank wigáta tchélχa mā'shipksh. Lútat- 3
Conjurers when treating approaching close by sit down the patient. The ex-

kish wigáta kíukshĕsh tcha'hlánshna. Shuyéga kíuks, wéwanuish
pounder close to the conjurer sits down. Starts choruses the conjurer, females

tchīk winóta liukiámnank nadshā'shak tchûtchtníshash. Hánshna
then join in singing crowding around him simultaneously while he treats (the sick). He sucks

mā'shish	hû'nk	hishuákshash,	tátktish	ĭ'shkuk,	hantchípka	tchĭ'k		
diseased	that	man,	the disease	to extract,	he sucks out	then		
kukuàga,	wishinkága,	mû'lkaga,	kákọ	gĭ'ntak,	káhaktok	nánuktua		
a small frog,	small snake,	small insect,	bone	afterwards,	whatsoever	anything		
3 nshendshkáne.	Tsĭ'ks	toks	ké-nsht	tchékĕle	ítkal;	lûlp	toks	mā'-
small.	A leg		being fractured	the (bad) blood	he extracts;	eyes	but	be-
shisht	tchékĕlitat	lgû'm	shû'kĕlank	kĭ'tua	lû'lpat,	kû'tash	tchish	
ing sore	into blood	coal	mixing	he pours	into the eyes,	a louse	too	
kshéwa	lûlpat	pû'klash	tuizámpgatk	ltúizaktgi	gíug.			
introduces	into the eye	the white of eye	protruding	for eating out.				

NOTES.

583, 1. shuákia does not mean to "*call on somebody*" generally, but only "*to call on the conjurer* or medicine man".

583, 2. wán stands for wánam nĭ'l: the fur or skin of a red or silver fox; kaníta pĭ'sh stands for kanítana látchash m'nálam: "outside of his lodge or cabin". The meaning of the sentence is: they raise their voices to call him out. Conjurers are in the habit of fastening a fox-skin outside of their lodges, as a business sign, and to let it dangle from a rod stuck out in an oblique direction.

583, 3. tchélza. During the treatment of a patient, who stays in a winter house, the lodge is often shut up at the top, and the people sit in a circle inside in utter darkness.

583, 5. liukiámnank. The women and all who take a part in the chorus usually sit in a circle around the conjurer and his assistant; the suffix -mna indicates close proximity. Nadshā'shak qualifies the verb winóta.

583, 5. tchûtchtníshash. The distributive form of tchû't'na refers to each of the *various* manipulations performed by the conjurer on the patient.

584, 1. mā'shish, shortened from māshípkash, mā'shipksh, like k'lä'ksh from k'läkápkash.

584, 2. 3. There is a stylistic incongruity in using the distributive form only in kukuàga (kúe, *frog*), káhaktok, and in nshendshkáne (nshekáni, npshékani, tsékani, tchékĕni, *small*), while inserting the absolute form in wishinkága (wíshink, *garter-snake*) and in kákọ; mû'lkaga is more of a generic term and its distributive form is therefore not in use.

583, 2. káhaktok for ká-akt ak; ká-akt being the transposed distributive form kákat, of kát, which, what (pron. relat.).

584, 4. lgû'm. The application of remedial *drugs* is very unfrequent in this tribe; and this is one of the reasons why the term "conjurer" or "shaman" will prove to be a better name for the medicine man than that of "Indian doctor".

584, 4. kû'tash etc. The conjurer introduces a louse into the eye to make it eat up the protruding white portion of the sore eye.

KÁLAK.

THE RELAPSE.

IN THE KLAMATH LAKE DIALECT BY DAVE HILL. OBTAINED BY A. S. GATSCHET.

Hä náyäns hissuáksas mä′shitk kálak, tsúi kíuks nä′-ulakta tchu-
When another man fell sick as relapsed, then the conjurer concludes to

tánuapkuk. Tchúi tchúta; tchúi yá-uks huk shläá kálak a gēk. Tchí
treat (him). And he treats; and remedy this finds out (that) relapsed he. Thus

huk shuí′sh sápa. Tsúi nä′sh shuí′sh sáyuaks hû′mtcha kálak, tchúi 3
the song-remedy indicates. And one song-remedy having found out (that) of the kind of relapsed (he is), then

nánuk hûk shuí′sh tpä′wa hû′nksht kaltchitchíkshash heshuampělítki
all those remedies indicate (that) him the spider (-remedy) would

gíug. Tchúi hû′k káltchitchiks yá-uka; ubá-us hûk káltchitchiksam
cure. Then the spider treats him; a piece of deer-skin of the spider

tchutĕnō′tkish. Tsúi húnkantka ubá-ustka tchutá; tátáktak huk 6
(is) the curing-tool. Then by means of that deer-skin he treats (him); just the size of the spot that

kálak mä′sha, gä′tak ubá-ush ktû′shka tä′tak huk mä′sha. Tsúi hûk
relapse is infected, so much of deer-skin he cuts out as where he is suffering. Then

káltchitchiks siunóta nä′dsk̲ank hû′nk ubá-ush. Tchû′yuk p′laíta
the "spider" song is started while applying that skin piece. And he over it

nétatka skútash, tsúi sha hû′nk udû′pka hänä′shishtka, tsúi hû′k 9
he stretches a blanket, and they it strike with conjurer's arrows, then it

gutä′ga tsulä′kshtat; gä′tsa lû′pí kiatéga, tsúi tsulé′ks k̲′läká, tchúi
enters into the body; a particle firstly enters, then (it) body becomes, and

at pushpûshuk shlē′sh hûk ubá-ush. Tsúi mä′us tánkĕni ak waítash
now dark it to look at that skin-piece. Then after a while after so many days

hû′k pûshpúshli at mä′ns=gitk tsulä′ks-sitk shlä′sh. Tsí nĭ sáynakta; 12
that black (thing) at last (is) flesh-like to look at. Thus I am informed;

túmi hû′nk sháyuakta hû′masht=gîsht tchutī′sht; tsúyuk tsúshni
many men know (that) in this manner were effected cures; and he then always

wä′mpěle.
was well again.

NOTES.

585, 1. náyäns hissuáksas: another man than the conjurers of the tribe. The objective case shows that mä′shitk has to be regarded here as the participle of an impersonal verb: mä′sha nûsh, and mä′sha nû, it ails me, I am sick.

585, 2. yá-uks is remedy in general, spiritual as well as material. Here a tamánuash song is meant by it, which, when sung by the conjurer, will furnish him the certainty if his patient is a relapse or not. There are several of these medicine-songs, but all of them (nánuk hû′k shuí′sh) when consulted point out the spider-medicine as the one to apply in this case. The spider's curing-instrument is that small piece of buckskin (ubá-ush) which has to be inserted under the patient's skin. It is called the spider's medicine because the spider-song is sung during its application.

585, 10. gutä'ga. The whole operation is concealed from the eyes of spectators by a skin or blanket stretched over the patient and the hands of the operator.

585, 10. kiatéga. The buckskin piece has an oblong or longitudinal shape in most instances, and it is passed under the skin sideways and very gradually.

585, 11. tánkĕni ak waítash. Dave Hill gave as an approximate limit five days' time.

SWEAT-LODGES.

IN THE KLAMATH LAKE DIALECT BY MINNIE FROBEN. OBTAINED BY A. S. GATSCHET.

É-ukshkni lápa spû'klish gítko. K̲úk̲iuk k̲ĕlekápkash spû'klishla
The Lake people two (kinds of) sweat-lodges have. To weep over the deceased they build sweat-lodges

yépank käíla; stutílantko spû'klish, käíla waltchátko. Spû'klish a
digging up the ground; are roofed (these) sweat-lodges, with earth covered. (Another) sweat-lodge

3 sha shû'ta kué-utch, kítchikan'sh stinága=shítko; skû'tash a wáldsha
they build of willows, a little cabin looking like; blankets they spread

spû'klishtat tataták sĕ spûkliá. Tátataks a hû'nk wéas lúla, tatátaks
over the sweating-lodge when in it they sweat. Whenever children died, or when

a híshuaksh tchímĕna, snáwedsh wénuitk, k̲û'k̲i k̲ĕlekátko, spû'klitcha
a husband became widower, (or) the wife (is) widowed, they weep for cause of death go sweating

6 túmi shashámoks=lólatko; túnepni waítash tchík sa hû'nk spû'klia.
many relatives who have lost; five days then they sweat.

Shiúlakiank a sha ktái húyuka skoilakuápkuk; hútoks ktái k̲á-i tatá
Gathering they stones (they) heat (them) to heap them up (after use); those stones never

spukliû't'huīsh. Spúklish lúpĭa húyuka; k̲élpka a át, ílhiat átui,
having been used for sweating Sweat lodge in front of they heat (them); heated (being) when, they bring (them) inside at once,

9 k̲ídshna ai î ámbu, kliulála. Spû'kli a sha túmĕni "hours"; k̲élpkuk
pour on them water, sprinkle. Sweat then they several hours; being quite warmed up

géka shualkóltchuk péniak k̲ō'k̲s pépe-udshak éwagatat, k̲ók̲etat, é-ush
they leave (and) to cool themselves off without dress only to go bathing in a spring, river, lake

wigáta. Spukli-uápka mā'ntch. Shpótuok i-akéwa kápka, skû'tawia
close by. They will sweat for long hours. To make themselves strong they bend down young pine-trees (they) tie together

12 sha wéwakag knû'kstga. Ndshiétchatka knû'ks a sha shúshata.
they small brushwood with ropes. Of (willow-)bark the ropes they make.

Gátpampĕlank shkoshkî'lχa ktáktiag hû'shkankok k̲ĕlekápkash, ktá-i
On going home they heap up into cairns small stones in remembrance of the dead, stones

shúshuankaptcha î'hiank.
of equal size selecting.

NOTES.

No Klamath or Modoc sweat-lodge can be properly called a sweat-*house*, as is the custom throughout the West. One kind of these lodges,

intended for the use of mourners only, are solid structures, almost underground; three of them are now in existence, all believed to be the gift of the principal national deity. Sudatories of the other kind are found near every Indian lodge, and consist of a few willow-rods stuck into the ground, both ends being bent over. The process gone through while sweating is the same in both kinds of lodges, with the only difference as to time. The ceremonies mentioned 4–13. all refer to sweating in the mourners' sweat-lodges. The sudatories of the Oregonians have no analogy with the *estufas* of the Pueblo Indians of New Mexico, as far as their construction is concerned.

586, 1. lápa spû'klish, two sweat-lodges, stands for two *kinds* of sweat-lodges.

586, 5. shashámoks=lólatko forms *one* compound word: one who, or: those who have lost relatives by death; cf. ptísh=lûlsh, pgísh=lûlsh; hishuákga ptísh=lúlatk, male orphan whose father has died. In the same manner, k̲ĕlekátko stands here as a participle referring simultaneously to híshuaksh and to snáwedsh wénuitk, and can be rendered by "*bereaved*". Shashámoks, distr. form of shá-amoks, is often pronounced sheshámaks. Túmi etc. means, that many others accompany to the sweat-lodge, into which about six persons can crowd themselves, bereaved husbands, wives or parents, because the deceased were related to them.

586, 7. Shiúlakiànk etc. For developing steam the natives collect only such stones for heating as are neither too large nor too small; a medium size seeming most appropriate for concentrating the largest amount of heat. The old sweat-lodges are surrounded with large accumulations of stones which, to judge from their blackened exterior, have served the purpose of generating steam; they weigh not over 3 to 5 pounds in the average, and in the vicinity travelers discover many small cairns, not over four feet high, and others lying in ruins. The shrubbery around the sudatory is in many localities tied up with willow wisps and ropes.

586, 11. Spukli-uápka mā'ntch means that the sweating-process is repeated many times during the five days of observance; they sweat at least twice a day.

A DOG'S REVENGE.

A Dakota Fable, by Michel Renville. Obtained by Rev. S. R. Riggs.

Śuŋka waŋ; ḳa wakaŋka waŋ waḳiŋ waŋ taŋka hnaka. Uŋkaŋ
Dog a; and old-woman a pack a large laid away. And

śuŋka ḳoŋ he sdonya. Uŋkaŋ waŋna haŋyetu, uŋkaŋ wakaŋka
dog the that knew. And now night, and old-woman

iśtiŋmaŋ kećiŋ ḳa en ya: tuka wakaŋka kiŋ sdonkiye ç̣a kiktahaŋ 3
asleep he thought and there went: but old woman the knew and awake

waŋke, ç̣a ite hdakiŋyaŋ ape ç̣a kićakse, ç̣a nina po, keyapi.
lay, and face across struck and gashed, and much swelled, they say.

Uŋkaŋ haŋliaŋna hehaŋ śuŋka tokeća waŋ en hi, ka okiya ya.
And morning then dog another a there came, and to-talk-with went.

Tuka pamahdedaŋ ite mahen inina yaŋka. Uŋkaŋ taku ićante nišića
But head down face within silent was. And what of-heart you-bad

3 heciŋhaŋ omakiyaka wo, eya. Uŋkaŋ, Inina yaŋka wo, wakaŋka
if me-tell, he-said. And, still be-you, old-woman

waŋ teliiya omakiliaŋ do, eya, keyapi. Uŋkaŋ, Tokeŋ nićiliaŋ he, eya.
a hardly me-dealt-with, he-said, they say. And, How to-thee-did-she, he-said.

Uŋkaŋ, Wakin waŋ taŋka hnaka e waŋmdake ća heoŋ otpa awape:
And, Pack a large she-laid-away I-saw and therefore to-go-for I waited:

6 ka waŋna haŋ tehaŋ kehan, iśtiŋbe seća e en mde ća pa timaheŋ
and now night far then, she-asleep probably there I went and head house-in

yewaya, uŋkaŋ kiktahaŋ waŋke śta hećamoŋ: ka, Śi, de tukten
I-poked, and awake lay although this-I-did: and, shoo, this where

yau he, eye, ća itohna amape, ća dećen iyemayaŋ ce, eye ća kipazo.
you-come, she-said, and face-on smote-me, and thus she-me-left he-said and showed-him.

9 Uŋkaŋ, Huŋhuŋhe! teliiya ećanićoŋ do, ihomeća wakiŋ kiŋ uŋtapi
And, Alas! alas! hardly she-did-to-you, therefore pack the we-eat

kta ce, eye ća, Mnićiya wo, eya, keyapi. Ito, Minibozaŋna kićo wo,
will, he-said and, Assemble, he-said, they say. Now, Water-mist call,

ka, Yaksa taŋiŋ śni kico wo, Tahu waśaka kico wo, ka, Taisaŋpena
and Bite off not manifest call, Neck strong invite, and, His-knife-sharp

12 kico wo, eya, keyapi. Uŋkaŋ owasiŋ wićakićo: ka waŋna owasiŋ en
call, he-said, they-say. And all them-he-called: and now all there

hipi hehaŋ heya, keyapi: Ihopo, wakaŋka de teliiya ećakićoŋ će;
came then this-he-said, they-say: Come-on, old-woman this hardly dealt-with;

miniheićiyapo, haŋyetu hepiya waćonića wakiŋ waŋ teliiŋda ka on
bestir-yourselves, night during dried-meat pack a she-forbid and for

15 teliiya ećakićoŋ tuka, ehaeś untapi kta će, eya, keyapi.
hardly dealt-with-him but, indeed we-eat will he-said, they say.

Uŋkaŋ Minibozaŋna ećiyapi koŋ he waŋna maǧaźukiye ća, aŋpetu
Then Water-mist called the that now rain-made, and, day

osaŋ maǧaźu ećen otpaza; ka wakeya owasiŋ nina spaya, wihutipáspe
all-through rained until dark; and tent all very wet, tent-pin

18 olidoka owasiŋ taŋyaŋ lipan. Uŋkaŋ hehaŋ Yaksa taŋiŋ śni wihuti-
holes all well soaked. And then Bite-off-manifest-not tent-fast-

paspe kiŋ owasiŋ yakse, tuka taŋiŋ śni yaŋ yakse nakaeś wakaŋka
enings the all bit-off, but slyly bit-off so that old-woman

kiŋ sdonkiye śni. Uŋkaŋ Tahuwaśaka he wakiŋ koŋ yape ća maniŋ-
the knew not. And Neck-strong he pack the seized, and away

21 kiya yapa iyeya, ka tehaŋ elipeya. Hećen Taisaŋpena wakiŋ koŋ
off holding-in-mouth-carried, and far threw-it. So His-knife-sharp pack the

ćokaya kiyaksa-iyeya. Hećeŋ wakiŋ koŋ haŋyetu hepiyana temya.
in-middle tore-it-open. Hence pack the night during they-ate-

iyeyapi, keyapi.
all-up, they say.

24 Hećen tuwe wamanoŋ keś, saŋpa iwaliaŋićida wamanoŋ waŋ hduze,
So that who steals although, more haughty thief a marries,

eyapi ećе; de huŋkakaŋpi do.
they-say always; this they-fable.

NOTES.

588, 24. This word "hduze" means *to take* or *hold one's own;* and is most commonly applied to a man's taking a wife, or a woman a husband. Here it may mean either that one who starts in a wicked course consorts with others "more wicked than himself," or that he himself grows in the bad and takes hold of the greater forms of evil—*marries* himself to the wicked one.

It will be noted from this specimen of Dakota that there are some particles in the language which cannot be represented in a translation. The "do" used at the end of phrases or sentences is only for emphasis and to round up a period. It belongs mainly to the language of young men. "Wo" and "po" are the signs of the imperative.

TRANSLATION.

There was a dog; and there was an old woman who had a pack of dried meat laid away. This the dog knew; and, when he supposed the old woman was asleep, he went there at night. But the old woman was aware of his coming and so kept watch, and, as the dog thrust his head under the tent, she struck him across the face and made a great gash, which swelled greatly.

The next morning a companion dog came and attempted to talk with him. But the dog was sullen and silent. The visitor said: "Tell me what makes you so heart-sick." To which he replied: "Be still, an old woman has treated me badly." "What did she do to you?" He answered: "An old woman had a pack of dried meat; this I saw and went for it; and when it was now far in the night, and I supposed she was asleep, I went there and poked my head under the tent. But she was lying awake and cried out: 'Shoo! what are you doing here?' and struck me on the head and wounded me as you see."

Whereupon the other dog said: "Alas! Alas! she has treated you badly, verily we will eat up her pack of meat. Call an assembly: call *Water-mist* (*i. e.*, rain); call *Bite-off-silently;* call *Strong-neck;* call *Sharp-knife.*" So he invited them all. And when they had all arrived, he said: "Come on! an old woman has treated this friend badly; bestir yourselves; before the night is past, the pack of dried meat which she prizes so much, and on account of which she has thus dealt with our friend, that we will eat all up".

Then the one who is called *Rain-mist* caused it to rain, and it rained all the day through until dark; and the tent was all drenched, and the holes of the tent-pins were thoroughly softened. Then *Bite-off-silently* bit off all the lower tent-fastenings, but he did it so quietly that the old woman knew nothing of it. Then *Strong-neck* came and seized the pack with his mouth, and carried it far away. Whereupon *Sharp-knife* came and ripped the pack through the middle; and so, while it was yet night, they ate up the old woman's pack of dried meat.

Moral.—A common thief becomes worse and worse by attaching himself to more daring companions. This is the myth.

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